

ITEMS OF INTEREST.

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Thoughts from the Profession.

When you've got a thing to say,
Say it! Don't take half a day.
When your tale's got little in it,
Crowd the whole thing in a minute.
Life is short—a fleeting vapor—
Don't you fill the whole blamed paper
With a tale, which, at a pinch,
Could be cornered in an inch!
Boil her down till she simmers;
Polish her till she glimmers,
When you've got a thing to say,
Say it! Don't take half a day! —*Atlanta Constitution.*

AMALGAM INCIDENTS, NO. 2—THE GOLD TOOTH THAT FAILED TO MATERIALIZE AND A CHANGE IN SENTIMENT.

In a recent article I took occasion to intimate that “garish shows by bridge and crown” are not always considered in good taste. I shall now endeavor to elucidate this point. Fifteen years ago, a distinguished lawyer, of this city, came to me for dental repairs. His first request was that I should operate on a lateral incisor, right side, upper jaw. It already possessed a filling so extensive as nearly to represent the whole of the natural crown, and which was known in those days as a “built up gold tooth.” It was an imperfect structure, founded upon dead tissue and unwholesome conditions which necessitated its removal. Having accomplished this and a thorough cleansing and disinfection of the root, a platinum screw was firmly fixed in its nerve channel. Then I said to my patient, “I am about to make you a gold tooth which I intend shall be not only a good one, but the best gold in the world.”

Around the screw which I have just inserted I shall build a full-sized crown entirely of amalgam. When that is done you are to come a week later and have a fine gold plating fixed on its labial surface. Thus you will have a gold tooth without any of the impairments that usually attend its founding and construction." I almost feared to tell him my plan lest he might reject it. I thought he might say, "What! am I to go a whole week showing this amalgam in my mouth before you put on the gold?" But he merely replied "You are the doctor, go ahead." The time having come for completing my work I was about to proceed, when out of his mouth came this remarkable question, "Why do you want to put gold on?" I replied "My impression was that he desired it; that gold was generally considered the best for front teeth, and that somehow I entertained that opinion myself." He amazed me by saying, "I beg leave to differ with you entirely, and will tell you why. I have had a gold tooth in front of my mouth for several years, and supposed it an unavoidable necessity, but it has been a great annoyance to me. If I happened to meet a friend in the street and stopped to speak with him, while shaking hands he looked at my gold tooth, while conversing on however an important subject, he would give an occasional glance at my gold tooth, and when he said good-bye, a farewell lingering look rested on my gold tooth. Oh my! what a nuisance that gold tooth has been to me. Since you built up the amalgam tooth, a week ago, no one seems to have noticed that I had a tooth of any kind, and the relief has been so great that I resolved to ask you to finish it up and let it go."* His was an ingenious argument—as sensible as true—and I could not gainsay it. He was advised to keep his tooth bright and clean by brushing with powder. "In that case," I said, "no one can complain even of its appearance. Should you change your mind in the future and have a preference for gold, it can be applied at any time as well as now." The circling years have rolled away, and that amalgam tooth still holds its own in the faith and appreciation of its astute defender. By his sage opinion and its able expression, I have been encouraged, since then, to do

* This reminds me of an incident in my own practice. A young lady came in to have a broken-down upper central incisor built up with gold like one I had built up for a friend of hers. The cost deterred her. "I can build it up with alloy," I replied, "and if you will take pains to keep it polished, I believe you will like it. If you do not, I can plate the front with gold." She was much pleased with the result. Years afterwards she came in to show me how beautiful it looked. "Why," said she, "I like its appearance much better than I would glittering gold. Then it is so much less noticeable."—[ED. ITEMS.]

many things meritorious and well approved. As illustrating the changes of opinion that have occurred within a few years regarding amalgam, I will mention another incident that naturally grew out of what has already been told. The lawyer's wife also came to me about her teeth, and this, at our first meeting, was her peremptory demand, "My husband has a great fancy for amalgam and is pleased with what you have done for him, but I wish it distinctly understood that whatever fillings you make for me must be of gold." "All right," I replied, "gold they shall be." She spent four hours in my chair and took away as many fillings as her patience and my labor enabled me to make. I did not see this lady again for nine years, and then she entered my office once more, with this declaration, "I have come now to have my teeth finished and I want them all filled with amalgam." She did not say what had caused this change of sentiment, but I cheerfully complied with so reasonable a request, and one more set of teeth was numbered with the saved. The unreasonable worshiper of gold little knows with what a hearty disrelish many of the most intelligent and refined people look upon the pains and penalties inseparable from the use of gold.

J. W. Clowes.

SOCIAL RELATION WITH OUR PATIENTS.

In watching the rapid march of dentistry and in endeavoring to keep pace with its phenomenal advancement, we sometimes forget that we live among people of other occupations, who justly expect of us a social reciprocity.

The busy dentist will understand how natural it is, after a hard day's operating, to drop into an easy chair after supper, and brood over the apparent drudgery of our profession and exalt the life of ease which we suppose other men to be living. Thus we sit, stunting our intellect, brewing discontent and courting physical disease.

How much better, on closing our office for the day, if we would avoid such inanition, and spend the evening in pleasant, health-promoting, brain-feeding, social intercourse.

No man can confine himself to an office, whatever the environments, and still be the possessor of the cheerful, sympathetic disposition of the one who daily studies the variegated natures of his fellow-men. It is variety of influence which forms a broad, comprehensive and well-balanced mind.

Then, again, from a business standpoint. We cannot shut ourselves up in our offices, sitting there as a hermit in dignified

seclusion, and expect people to cherish for us the same feeling of good-will and friendship that would follow our becoming one of their number in social life. But in seeking to be congenial with our friends we must avoid their vices and dissipations. The moral character of professional men should be without reproach. Particularly is this true of the dental profession, requiring, as it does, the strongest moral character to resist the temptations which scheming nymphs continually set to entrap us.

We are accustomed to regard the ministry as a calling requiring the highest plane of morality. But to be a good dentist means not only to be a skilled operator, a learned pathologist, and a cautious therapist, but also to be a thoroughly consistent moralist, a pure, honest, conscientious and upright man.

To be this, our daily associations must be those calculated to inspire us to high and noble thoughts and deeds; associations which will instill us with the sacred principles of true philanthropy. This does not imply that we must necessarily become members of the aristocratic circle of the town, but it does mean that we must not become identified with street-corner loafers, dry-goods-box whittlers, and frequenters of saloons, club rooms, and other places of vice.

We should feel and manifest an interest in public affairs. No opportunity to render good to our fellow-men should be neglected. By genuine sympathy and material assistance we gain the affection of those around us, while by arrogant independence we become objects of their hatred.

We must be congenial in our offices to all alike, whatever stratum in the pyramid of society they may belong to. Caste may be acknowledged by some people, but no professional man can countenance it. There is but one atmosphere in which the dentist can socially meet his patients—that is one where pure air knows not the contamination of religious dissension, political corruption, or society strata. If you do not live in this atmosphere, elevate yourself to it, by being pure, true, conscientious and honest, and see if a few years of the new life does not give you that sense of happiness and self respect which should properly accompany every man in life.

L. B. Torrence, Chester, Ill.

A Frenchman has succeeded in making commercially pure chloroform. Heretofore this has been considered impossible. As the impurities in chloroform are generally the cause of its fatal effects, the Frenchman's achievement is regarded as very important.

—Mechanical and Electrical Progress.

ALUMINUM.

Symbol—Al. Sp. gr.—2.5. Atomic wt.—27.5.

Since it has become possible to produce from the ore aluminum of nearly absolute purity, and at a low cost, a channel of usefulness is opened heretofore not known to exist. Beautiful objects of art and implements of use are wrought from it, limitless in variety and form.

Its application to dentistry is not new. Many years ago earnest efforts were made to substitute it for gold and silver, but it did not fulfill the promise, for it would disintegrate in the mouth in a comparatively short time, and, therefore, was generally discarded. Recent improvements in its manufacture have demonstrated the then existing faults, and have shown that to the impurities contained therein could be attributed its failure. These impurities were silicon and iron, which obtained to the extent of six to eight per cent, and which altered entirely the character of the purer metal as now produced. By the process of electrolysis these impurities are almost entirely eliminated, and analysis will show a grade of fineness of $99\frac{1}{2}$ per cent. But aluminum, pure as this, is not so suitable for dental purposes as that which contains three or four per cent of alloy, as it is too soft, and is void of the requisite strength. The addition of three per cent of silver does not detract from its non-corrosibility, while it renders it stronger and of better color.

To cast aluminum requires a heat of $1,300^{\circ}$ Fah. At $1,000^{\circ}$ it loses its integrity and becomes pasty, and even at 400° its tensile strength is greatly reduced, but only so long as this degree of temperature is maintained.

Passing it through the rolls gives it rigidity in proportion to the pressure; thus the proper degree of strength for a plate can be acquired by first annealing it and then carefully rolling. If the plate is already too rigid, cover it with oil and subject it to a heat sufficient to burn off the oil; this will be about right for swaging.

As a conductor of heat and electricity it stands fourth to silver, copper and gold; but less than one-half that of silver. Its malleability holds about the same relationship. It is non-magnetic.

It is claimed that a flux has been discovered that makes it possible to successfully solder it with solders in common use; but whether the peculiar demands of dentistry afford a proper field for efforts in this direction is yet to be demonstrated. Sufficient for the present is the consideration of its adaptability to cases that require no soldering; and here recent experiences answer to the

question in the affirmative, not as castings, which have been, in a measure, successful, but in plate form, with rubber attachments.

The metal does not easily oxidize, nor is it affected by nitric or sulphuric acid, and only by hydrochloric, which is its natural solvent, and with which it forms aluminum chloride. Neither do organic secretions affect it, or the sulphur contained in vulcanite rubber. In view of these desirable properties, together with its cheapness, it will doubtless take the place of the royal metals, in a large number of instances, where cheapness is a necessary consideration.

W. S. Elliott, D.D.S., Sag Harbor, N. Y.

DELICATE MANIPULATION AGAIN.

In your January issue, I noticed a short article headed "Delicate Manipulation," from the pen of Dr. L. M. Hanaford, who doubts whether the work of the dentist will favorably compare with that of skilled jewelers, watchmakers, and other lines of handicraft.

We can admit that for regularity, ornamentation and polish they greatly surpass that of the best specimens of crowns and bridge-work, and yet we would do dentists great injustice to thus reduce only these characteristics to comparison, as they are not those of which dentists boast. However, laying aside other considerations peculiar to our calling to heed only those of the mechanical features, we must duly appreciate the environments before a rational comparison can be admitted. A skilled jeweler or watchmaker sits beside his bench, before good light, with his arms supported and his body in an easy and comfortable attitude with every form of instrument, machinery and appliance which modern invention offers. He works on planes, squares and circles with everything convenient, and free from embarrassment of a second party always present.

With the dentist, on the contrary, he does not find his patients' teeth in his hands, or fixed in a vise on a bench before him; otherwise he could present a fine array of high polish and exquisite work, too. But teeth are to be crowned and filled for nervous women and children, with tossing heads, flow of saliva, decays below the gum, blood exuding, want of sufficient space between the teeth of great length, bell-crowned, and decays on posterior surfaces, etc. Rubber-dam will be hard to apply, and clamps and dam obscure the light. Human teeth, too, are of such form and structure as to require any and every variety of shape of filling, and crowns and bridges must conform to these irregularities, and yet carry along

with them the "studied negligence" of natural harmony, and to conserve the greatest possible usefulness and comfort to the patient.

The dentist will operate with his left arm above his head, his wrist at right angle, and with his thumb and fingers to hold the head steady, the mouth open, the obstructions out of way of light, and a fender against a slipping instrument. His body meantime at an angle of forty-five degrees. He may stand for two and a half hours over a filling with patient restless and moaning, yet the work must be completed before stopping. The knowledge of the uncertainty of the work when completed, and the nervous strain incident to sympathy for the patient will be the greatest of all the strains on him.

While this is rather pessimistic in appearance the average dentist will find it no greatly overdrawn picture, and will often meet with many worse conditions.

E. S. Chisholm, Tuscaloosa, Ala.

PYORRHEA ALVEOLARIS.

A physician became disgusted with his own treatment of pyorrhea alveolaris and sent his patient to me. After thoroughly cleansing the parts and removing tartar, I applied the following remedy, given me by Dr. John Riggs, of Hartford, over thirty years ago: His mode of applying the remedy, which he claimed essential, was with small excavators armed with pledgets of absorbent cotton, forcing it well down between the teeth and the free edges of the gums and their sockets, till all the parts are thoroughly bathed with the liquid. After applying the remedy, I discharged the patient, and gave him a small vial of the liquid, with instructions how to use it, and to call again in a week. On his second visit his condition was much improved, but still a slight discharge of pus from between the teeth and sockets. In his absence I prepared Dr. Dodge's remedy, a remedy which I seldom use on account of its corrosive nature; but as his was a severe case, I applied it on his second visit, using it in the same manner as the first remedy, but with more caution, as it is liable to produce an eschar, especially when applied to the lower teeth. In such cases the gums should be well protected by bibulous paper or absorbent cotton, as I have had some trouble with it. After applying the last named remedy I discharged the patient, with instructions to continue the use of Dr. Riggs' remedy, and to report in ten days. I did not

see him again for nearly two months, when his gums were well and his general health good.

Dr. Riggs' formula is as follows :

R. Carbolic acid.....	1 part.
Tinct. iodine.....	1 "
Glycerin.....	10 "

Rub well in a mortar, and gradually add chloride soda, 6 parts.

Formula of Dr. N. Dodge, of New York, is as follows :

R. Acid sulphuric.....	3j.
Water.....	3ij.
Soda biborate.....	3iv.

Formula of Dr. F. Y. Clark :

R Carbolic acid.....	3v.
Alcohol.....	3iv.
Glycerin.....	3j.
Oil pimentos.....	3iij.
Sol. red aniline.....	3ij.

I have tried several other remedies, but found these the best. A number of my patients keep Dr. Riggs' prescription in their house, and many use it often, and would not be without it in their family, as it keeps the gums healthy and well when used according to directions.

L. Betts, Du Quoin, Ill.

A WARNING.

Having recently had an educational experience in the line of an explosion, I desire space in your pages to report it.

My alcohol lamp—a large glass globe one—stood in the full sunshine on a stand, breast high, the wick tube turned toward me. On removing the cap and touching a match to it, there was an explosion that blew me half way round on my feet, throwing the burning alcohol full in my face. The shock was so great, that for an instant consciousness was lost. I never knew till that moment that I was an ambidexter, but proved it then and there, to my full satisfaction, and thus soon had the flames subdued.

The wick—a large woven one—had blown out, and struck me on the chin, and the burning alcohol had set me on fire. Result: A severely burned and abraded chin; loss of my whiskers (Burnsides); a week's enforced idleness. This is a warning to all to keep their alcohol lamps out of the sun's rays. Had the lamp been on a level with the eyes, some oculist would probably have had a patient, and the dental profession one less practitioner.

W. H. H. Barker, Miller, So. Dak.

THE CONDITIONS OF LONGEVITY.

[Continued from February.]

The truth is we *eat too much*. Nature does not call for it, but an artificial appetite created by indulgence, just as the longing for stimulants, is artificial. "Rise from the table with an appetite," says the best writers on hygiene. But who regards the counsel? It is surprising how small a quantity of food will keep us in good health and spirits. A colored student in our Boston Theological School passed a year on six cents a day, and came out healthy and strong. The writer of this does not consume food above the cost of ten or twelve cents a day, and yet—well, look at him! On his seventy-eighth birthday he pulled his canoe four miles on one of the lakes in the Maine woods, and can do it now in his eighty-second year. I repeat, we break down, not from overwork, but from over-feeding. When will we learn to listen to Mother Nature?

Our food is taken at the wrong time, and too hastily. The morning is the time for our principal meal, not the evening. Some years ago, during the season of our Annual Conference, I was the guest of a physician. He one day remarked to me:

"You will live to be a hundred years old, if no accident befalls you."

"Why do you think so?" I asked.

"Because I notice your principal meal is your breakfast."

This is true. I rise from my night's repose hungry, and it is the only time in the day when I have that sensation. "But," the reader will say, "I have no appetite in the morning." I will tell you why. You rise in the morning, quickly dress yourself, drop down at the table, swallow in haste a cup of coffee, hurriedly eat a hot roll, seize your hat, and rush to the cars or your place of business, drive through your morning work, run into a restaurant, swallow something that an alligator would find it difficult to digest, go back again to your study, counting-room or mart of trade, where you are driven by the press and perplexities of business or study until five o'clock, when you hasten home faint and exhausted, and sit down to your six-o'clock dinner. The same habit of hurry clings to you at this meal, and you bolt a mass of hot meats and the usual etceteras, and go to bed to toss and turn and wrestle with horrid shapes. Your digestive organs were in no condition to receive that mass of matter. The business, the planning, the

brain-work of the day, had driven the blood to the brain and lungs, thus checking the flow of the gastric dissolvents; and now all night, instead of quiet rest, nature has been at work to remove that half-digested mass of material from the stomach.

Do you wonder that you have no appetite in the morning? Now the stomach, as well as other organs, calls for seasons of rest and recuperation, or it will fail in its functional duties. Would you have length of days? Change all this. Put yourself under a course of severe physical training; it may cost you something at first, but it will be a safe and paying investment. Exercise for yourself what you require of your children—restraint. “Drop that glass,” you say to a friend whom you see on the road to ruin. “Put a knife to thy throat if thou art a man given to appetite,” says the wise man.

But I must come to my last point, which, to me, is the most important—the *quality* of food to be taken. The first question asked by a man seeking for the truth on the matter of physical life and its conservation, will be: “To what order of animal life do I belong? Am I grammivorous or carnivorous? Was I intended by the great Author of all orders of being to live by food drawn from the vegetables or from the animal kingdom?” I have no space to go into this subject *in extenso*, but must confine myself to a few salient points. All animals of the bovine and equine species, whether wild or tame, draw their sustenance from the vegetable kingdom. Our cousins, the numerous monkey tribes, are vegetarians. Now the teeth of all these classes are constructed on the same principles as those of the genus *homo*; therefore, the inference is fairly drawn that it was intended for man to take his food from the same source. Then, turning to the Book, we find this direction given to the man as he was started on his career (Gen. i, 29): “And God said, Behold [mark this], I have given you every herb yielding seed, which is on the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat” (food). Let any one look over the early history of the Israelites and note how often the “fruits” of the land are referred to as a blessing from God for the use of man. When, in the terrible journey through the wilderness, a miraculous supply of food became a necessity, that which was furnished was a vegetable substance. But the people “fell to lusting, saying, Who shall give us flesh to eat?” Then came the quails, and with them a curse. Recall, also, the case of Daniel and his companions, who refused the flesh from the table of the king, but maintained a vegetable diet and flourished.

Then consider what a small proportion of the human family eat the flesh of dead animals. The religion of the millions of Hindus forbid the taking of life of any kind, and of course they eat no flesh. Only the lowest and most savage of people eat flesh. I am fully persuaded that the use of flesh food is not only not essential to the most perfect health, but that it is a slow poison, conveying into the system *bacilli* from animal disease, which immediately commence their deathly work by attacking the living tissue of our organs. But I am sad to feel that I am engaged in the task of Sisypheus.

Let me close with a bit of personal experience. I was not a very strong lad in my early days. Four years spent on a shoemaker's bench (from fourteen to eighteen) were not a sanitary measure, to say the least. But I taught myself to blow a wind instrument, and playing in a band for three and a half years counteracted the evil effects of sitting in a stooping posture over my daily task, and it also improved my wind, which used to be an essential thing for a Methodist preacher. In 1834, when I had been in the itinerancy four years, I entered into a dietary covenant with another preacher not to eat flesh of any kind, no animal oil, no butter, no tea or coffee. We were moved to this experiment to try the Graham system of living, which was then stirring the community. "Well, how did it affect you?" I never felt better in my life; but for a Methodist preacher, moving about from house to house, it was inconvenient, and was abandoned at the close of the year.

I was never a great eater of flesh. Pork was from childhood an abomination. Some dozen years ago I wholly abandoned the use of flesh meat. I think I have fully tested the theory, and am now prepared to say a vegetable diet is the key to health and a long and enjoyable life. My average weight, when in the active work, was one hundred and fifty-five pounds; when I stepped on the scales a week ago I tipped it at one hundred and seventy-four. I have none of that sense of fullness and pain I used to suffer after a flesh dinner; but for my general knowledge of physiology I should not know that I possessed such an organ as the stomach. Poor Carlyle, in his sufferings, wished he was well rid of that organ. The terrible headaches for which I had been so often blistered and bled are gone. I have found the normal condition of humanity.

"How do you live?" you ask. I take for my morning meal a small saucer of thoroughly cooked oat-meal mush, with a little milk and sugar. When I can procure them, I eat one or two fresh

eggs which have stood in hot water just ten minutes; they are then soft, yet cooked through. A baked potato, a slice of wheat-meal bread and one cup of coffee are added. At night a small bowl of boiled milk. My milk is from one cow, and is corked closely in a bottle till used. Fruit of all kinds, bearing seeds in itself, I use freely. This is my uniform diet.

Now, in addition to this simple dietary, I have always taken special care of my body, keeping the skin clean by sponge-baths and friction, specially taking pains to expand the lungs by the use of a small tube carried about in my pocket. So simple is this mode of life that I do not find it necessary to make changes with the passing of the seasons. The only change is in my clothing. Summer and winter I am careful to guard the three most important parts of the human system against cold—the chest, the back between the shoulders, and the feet.

I do not take the same heat-giving food in hot as in cold weather. In the heat of summer public tables, and private ones, too, are loaded with the fever-infected flesh of dead animals! I put an exclamation point there, as a mark of wonder and surprise, as “O, the folly of sinners!” *Rev. Mark Trafton, M. A.*

THOUGHTS ABOUT BLOOD.*

To obtain any accurate conception of blood as a very considerable portion of the animal body, first impressions must be laid aside, and blood be looked on and thought of not as simply a colored liquid—not as simply a watery fluid, holding in solution the chemical elements which serve as nutrition of the body and become the constituent elements of the tissues. The blood is itself a vitalized tissue, capable of performing functions as well as passively having uses.

The juice of fruits corresponds in some respects to the blood of animals. The sap of trees, shrubs and plants has much the same uses as the blood of animals. But to conceive of blood as wholly like sap and the juices of fruits, except in color, would be the farthest possible from a true conception of the nature, functions and uses of this important tissue of the animal body.

The most attractive feature of blood, when first observed, is its high color. But color is a feature of almost no significance, physiologically considered. The fluid, watery portion of the blood,

* Iowa Dental Society.

is almost colorless, and appears red because of the great number of red corpuscles which float in it. It becomes necessary, therefore, to divest the mind of the idea that blood is necessarily and always red; for we have in the body not alone red blood, but white blood, bluish-red blood and blood almost black. The lymphatic and lacteal vessels contain the white blood. The lymphatics follow the arteries everywhere, and are continually borrowing from the arterial current their liquid supply, and yielding up in return corpuscles to supply the perpetual waste of corpuscular elements in the red blood. Draper, in his physiology, says, that millions of blood corpuscles die every moment. They are like the epherema of the atmosphere—which come into existence and fill the air for a day, then die, and millions more take their places.

Blood is therefore more than a watery fluid. It has been called “liquid flesh,” because it contains all the elements that compose the tissues, carrying nutrition to every part.

The blood-vessels, including the lymphatics, are like the rivers of a country, which serve for the transportation of food to all the people, and serve also the purpose of drainage to carry off the filth of the country.

Another very noticeable fact concerning blood is its unceasing motion in a progressive current. By a very general consensus of opinion the movement of blood is attributed to the muscular action of the heart as chief source of power.

This is wholly an involuntary power. It works without our consciousness. The voluntary muscles which we put into exercise at will suffer fatigue, and loss of tissue by use. They must have rest and recuperation. But the heart takes no rest. It works on day and night without the conscious fatigue which is felt in the other muscles, and without the nights’ rest being required for recuperation.

The ordinary mind looks at the movement of the blood as merely mechanical, and on the heart as simply a muscular force, like a great force-pump acting mechanically to drive the blood through the blood-vessels in a perpetual round. Some physiologists, too, seem to have no higher conception of the circulation of the blood than that it is moved like any inert body when a sufficient mechanical force is applied—forgetting that blood is alive and capable of motion independent of mechanical forces, even resisting the mechanical force of the heart.

Is the mechanical action of the heart adequate, even aided by the contractility of the arteries, to overcome the resistance to the current through all the systemic circulation?

When we consider the immense resistance to this mechanical action, produced by friction of the current against the walls of the vessels, the vessels themselves becoming smaller and smaller as distance from the heart increases, branching into innumerable smaller vessels which anastomose with each other in every direction and at various angles, and forming a vast network of hair-like vessels on the periphery finer than the finest net-work—then if we could measure the length of all the capillary tubes in this vast ramification, and could calculate the friction within the tubes, our conception of the mechanical power of the heart would be but mockery of the real power involved in the circulation of the blood.

We must look, therefore, to other forces concerned in the circulation beside the muscular power of the heart and the contractility of the arteries. The contractile tissue of the arteries is under the control of the vaso-motor nerves which thread their minute fibers into the tissue and cause the artery to contract on its contents in harmony with the impulse of the heart, thus aiding the onward flow of the blood.

But in tracing the course of the arteries onward from the aorta, they grow less in size, not simply by a lessening of the diameter of the tube, but by dropping one after another of the fine coatings that constitute the structure of the large arteries; so that when the capillary vessels are reached there only remains the inner arterial coating to constitute the capillary tubes.

This inner arterial coating is the most delicate and tender of all its coatings, being constructed simply of tissue cells glued together by their protoplasm; but each cell being an independent vital organism endowed with contractile and expansive power, their constant movements, operating at the point of greatest resistance to the blood current, in my opinion, greatly assist in carrying the blood onward into the capillaries of the venous system.

Are the forces now named sufficient to account for the circulation of the blood? I have only mentioned forces from without, acting mechanically on the blood as an inert fluid tending to rest, rather than motion, the same as any other fluid which remains at rest till acted on by some force from without capable of overcoming its inertia.

If the circulation of the blood depended solely on mechanical force, it is doubtful that the heart, strong as it is, would endure the strain on its walls, or that the blood-vessels could resist rupture.

The nature of the blood, it seems to me, affords a more complete solution of the problem of circulation.

Blood is not a lifeless, inert mass, but a living animal tissue,

having within itself the essential elements of life and independent motion, residing in the blood corpuscles. Each corpuscle, red or white, is an independent organism, endowed with function.

Each cell of the body in its embryonic state is endowed with the power of differentiation or adaptation of itself to the functions it has to perform. There can be no such thing in nature as living organism without function. There is no more certain method of interpreting the functions of a cell than to learn its endowments and capabilities. Cells residing in fluids have the power of adapting themselves to the surrounding media in the performance of their functions. The function of the red corpuscles of the blood is to visit every tissue of the body and deliver up their store of oxygen obtained in the lungs and through the skin, and by a chemical combination with carbon take up carbonic gas in return for oxygen. Each cell, therefore, as an independent organism, must be presumed to have some independent method, all within itself, to enable it to perform its functions.

The locomotive apparatus of cells inhabiting liquids is of two kinds—the development of *pseudopodia* or of *cilia*.

The pseudopodia are projections of the protoplasmic body of the cell, which are used as extemporized feet or paddles to propel the cell along. This is an ameboid movement with which the white blood corpuscles are endowed.

The cilia are hair-like processes or filaments which project from the border of cells, and are endowed with a vibratory motion. The red blood-corpuscles are described by Cleland as exhibiting such cilia, by the constant movement of which they propel themselves along in the current of the blood. Dalton says that the heart's action is simply to keep the blood-vessels filled while other forces acting in harmony move the current along. We must, therefore, conclude that the blood-corpuscles are not borne along by the current, but by their own inherent power they become swimmers in the current.

Not only this, but they are able also to resist the current, make a halt and penetrate the walls of the vessels, and enter into the surrounding tissue. This is peculiarly true of the white corpuscles in times of severe inflammation. Draper insists that the red corpuscles have an attractive affinity for the muscular tissue through which capillary vessels pass, which holds them in contact with the walls of the vessels while they discharge their store of oxygen and take in carbonic di-oxide. This must imply a momentary resistance to the current of the blood while they effect the discharge through the walls by exosmosis, and at the same time lose their peculiar

affinity for the walls and hasten on in the current, thus at the same moment promoting nutrition and absorption.

Another important function of the blood in circulation, is, that thereby the heat of the body is maintained. In reading works on physiology, one will find many contradictory statements concerning the production of animal heat—one maintaining that it is produced almost wholly by a process of combustion in the lungs, where the oxygen of the atmosphere unites with the carbon and waste material in the blood, and forms carbonic acid gas. Others declare that the blood is actually made *cooler* in the lungs by the contact with and conductive power of cold air. The evidence of this they find in the fact that when cold air is inhaled it is exhaled warm air. Both theorizers have, no doubt, a measure of truth in their statements. While the contact of the atmosphere is cooling, the chemical changes which take place in the blood are heat-producing to such an extent as greatly to overbalance the loss of heat by the conductive power of the atmosphere.

Writers on this subject, by confining their thought and investigations too closely to the atmospheric contact of the great volume of blood in the pulmonary vessels, are inclined to overlook and forget to name other sources of animal heat, without which the heat of the body could not be maintained. The exterior of the body is a radiating surface, constantly being cooled down by the surrounding atmosphere, and if the blood in the capillary vessels of the skin must be supplied with heat generated in the lungs, so much of it would be lost by radiation and conduction before it could reach the integument of the hands and feet, that these remote members of the body would suffer no exposure in winter without freezing.

It should be borne in mind, that when one body moves on the surface of another body with which it is in contact, friction is created, and that friction generates heat. The friction of the blood passing rapidly through the blood-vessels must cause heat.

There is another and very active source of heat found in the chemical changes that are constantly taking place in the blood throughout its course, and in all the tissues ramified by the capillary system. Substances which have natural affinity for each other rapidly combine, and the rapidity of the molecular motion towards each other causes heat. By this means a uniform heat is maintained at remote distances from the heart and lungs, especially in the internal organs. Internal heat is one of the most marvelous facts connected with the circulation of the blood. Internal heat seems to be almost entirely independent of the heat produced by oxidation in the lungs—wholly beyond the control of atmospheric

changes of temperature and of artificial heat. Whatever may be the temperature on the surface of the body, the coldness of the hands or the heat of the feet, the internal heat remains the same—the same in summer as in winter—the same in the torrid zone as in the frigid zone—varying but four or five degrees from the average temperature of 100 degrees F., though one travel from the equator to the north pole, experiencing a change of temperature in the atmosphere of more than 140 degrees.

The maintainance of this animal heat at a high temperature and at about the average of one hundred is essential to life. If the temperature falls five degrees below, or rises five degrees above, life is endangered.

An interesting question occurs right here, and it may appear to some a foolish question to ask. Why does a person die of *heart-failure*? The State Board of Health have decided that to give heart-failure as a cause of death is not a sufficient account of the cause. What more is needed to explain death? Is death caused by the loss of animal heat, which we have seen is so essential to life? Heart-failure is instant death. A man cannot lose five or ten degrees of internal heat in an instant. It cannot be, therefore, that he dies from a sudden lowering of the temperature below the life standard. Can it be that death occurs from an interruption of nutrition? The blood, containing all the necessary nutrition of the body, is still in the blood-vessels after heart-failure, as before, and in immediate contiguity with the hungry tissues. Can it be possible that the tissues need to be nourished every moment to maintain the life of the body? Is it not true, that during active life the waste products of the organism far outweigh the accretions by nutrition for days, weeks, and sometimes months, and yet the patient does not die?

We are brought to the conclusion, therefore, that loss of nutrition is not the cause of death in heart-failure. After heart-failure, all the conditions essential to life, so far as life rests on the heart's action, are present, except one—that is, motion.

This brings us face to face with the most critical question of all—what is the relation of motion to life? From our instincts alone we associate life and motion. If we find an animal form dormant, and turn it over and over and place it in the conditions usual for it to manifest life, then, if it does not move, we say it is dead. If we find a person lying on a bed motionless and in apparent slumber, and if, by a touch, or call, or other methods usual to arouse one from sleep, he does not move, we conclude he is dead. The convincing evidence we have that a seed or plant is alive, is, that it exhibits motion by putting forth buds or leaves.

In relation to the blood of animals and man, it was said, and repeated over and over again more than two thousand years ago, "The blood is the life thereof." In what sense is it the life of the body? Is motion a synonym of life? With these questions concerning the relation of the motion of the blood to the life of the body, I will drop the subject.

From a scientific standpoint, *pulse* has been made the most practical matter of observation. At various points in the course of circulation the impulses of the heart may be felt by a gentle pressure of the finger—the most common point of observation being the wrist, where the radial artery lies near the surface.

Prof. L. C. Ingersoll.

THE LATEST IMPROVEMENT.

In a recent Ohio Dental Journal, I spoke of the difficulties attending the wearing of lower dentures. I had seen, previously to writing that paper, in the mouth of a patient a recent device for holding the lower set in place. I have since seen two other cases; one of the patients had previously experienced much trouble wearing his lower set, saying he "wore it in his pocket" most of the time.

In each of these cases the patients were realizing great satisfaction. The plates were always in place, no trouble in eating; in fact, they all seemed a complete success.

The invention is certainly original, unique and simple. It consists of a spiral spring enclosed in a tube, made of nickel, about one-half inch in length and three-sixteenths in diameter. The tube has a cap, removable, through which passes a pivot, to which motion is given by the spring. The second molar is left off the plates, and the tube vulcanized to the lower plate, and a piece of metal vulcanized to the upper plate, against which the pivot presses.

Theoretically, it would seem that the pressure so far back on the lower plate would displace it, but in fact nothing of the sort happens, the plate being held quite firmly in place. I asked each patient if the springs interfered in mastication, and they said not at all. One of these cases had been in wear a year.

The inventor is Dr. Stedman, of Laporte, Ind. He has been experimenting with different materials for springs—steel, nickel, platinized gold—and will probably adopt the latter. The invention is worthy the attention of the profession, and I believe will prove a great boon to those who are compelled to wear lower dentures.

—Prof. L. P. Haskell, in Ohio Journal.

PORCELAIN AND GLASS INLAYS.

The notice in *October Journal* on the above subject requires some corrections, as it may mislead many young practitioners.

For many years inlays on labial surfaces have been successfully accomplished by using the ends of continuous-gum teeth, as they taper from base to tip, requiring only fine corundum wheels to cut into disks till the desired size is reached to fit the cavity; cementing in or finishing the margins with gold; the preference would be given to a tight fit with a groove cut by a diamond disk and polishing down.

Land's system of inlays would be good if the furnace did not "gas;" even then several firings would be required to make up shrinkage and to be sure of color. Like Dr. Cunningham, of England, and Dr. Timme, of New York, I have been experimenting with glass inlays, and I will give my experience of them.

In the hand it is a feasible operation; in every-day practice it is a very uncertain material to handle. We must be guided by the case itself, not as we see it in the hands of Dr. Timme.

In the first place the gold will not keep its form while being taken from the mouth, and warping under fire, and the slightest pressing of the pliers in holding to fill the gold matrix will make a faulty inlay, which no amount of coaxing will make fit, therefore it is necessary to overcome this most serious of all troubles as follows: Burnish in, or, more properly speaking, press in the gold, No. 30 foil (not 60, as it leaves too much space), with cotton rolled tightly on a dull-pointed broach, using two, one to steady the base, the other to work it in place; leave plenty overlap; then remove and fill the impression with soft wax, and trim the gold with care, to leave a small overlap; replace in cavity, warm slightly, and press thoroughly in position; cool this; remove and invest very lightly in Teague's compound. You then have a true matrix to fuse the glass in.

As we receive it from the packages it is very likely to burn the color out, and I have found it troublesome in that respect. To overcome this I have adopted the following plan: Burn the color into spar; grind and mix with the glass; this gives a higher grade and more tooth-like substance than glass alone, with a fixed color; then, if a low fusing point is desired, add potassa to the desired quantity. One thing must not be lost sight of, that is, pressure is required on the inlay till the cement is thoroughly set, or it will change the position of the inlay. After the inlay is burned full enough a thin overlap or edge will be seen; if this is not burned,

the edges will not join perfectly. A fine glass disk, run around the edge, will smooth all this off, leaving a true face. If a contour is desired, a matrix may be made with gold foil built to form and invested in Teague's compound to keep it in form, leaving an opening to put in the powder.

In building large fillings do not trust them to hold in place without fastening; when the inlay of gold and wax is removed, get platina pins from an old tooth, point them and press in position from the under side, letting the rivet head be as close as possible to the base, as more room is required than the cavity permits, and must afterwards be deepened in the same direction as the pins are placed.

If the cavity is shallow, the under side must be roughened to cover the upper surface with wax and subject the inlay to fumes of hydrofluoric acid, which will give a good surface for holding to the cement. All inlays should be tried in, waxed in position and finally fitted with glass paper disks or diamond, as any attempt to trim on them after cementing may result in loosening from the cavity; but when once cemented well in, with a good match in color, they are the best fillings to imitate nature.

To fuse them requires a little stronger heat than when burnt on the gold alone. Over a true Bunsen burner I fix platina gauze on a sliding bar with a set screw; by using this, complete control of the flame is obtained and the inlay kept exactly at the desired point of the flame, leaving both hands at liberty and complete control of the work. The gauze is milled into a rim of platina, offering no impediment to the heat reaching the work.

A good result is obtained by making the first burning of a darker color and finishing with a lighter.

Always have plenty of space for proximate contours, and test the articulation before cementing, waxing the inlay in and grinding any point of contact that might displace the inlay; steam or burn off any wax, and dry in alcohol.

—Dr. D. Genese, in *Ohio Journal*.

Faught's electric gutta-percha heater is one of the recent adaptations of electricity to dental uses. With it, it is possible to rapidly and satisfactorily use gutta-percha in the mouth, sufficient heat being generated by a half-candle power Edison incandescent lamp to keep the aluminum point at the right temperature. For drying out canals or making examinations of the oral cavity it is also valuable and useful. — *Report of Com. in So. Asso., in Southern Journal.*

OBSCURE PAINS IN AND ABOUT THE JAWS.*

By obscure pains is meant pains, the causes of which are more or less evident or not evident at all.

First. As to pain. What is pain? Abstractly it is to be assumed that all here will agree that it is altered sensation.

Second. If sensation is altered, the alteration is to be accepted as lying with a cause.

Third. Cause lying back of pain in every instance, the term obscure pain resolves itself into one of ignorance of cause.

Fourth. Obscurity being one with ignorance, the common term shows itself to be relative,—that is to say, the obscure to one is the open to some other one. There is another way of putting this in connection with the present occasion,—viz., it is not impossible, by reason of work done by members of this Society, that the term “obscure,” as applied to pains in and about the jaws, from the standpoint of an individual’s experience and knowledge, may, by reason of a putting together of heads, find to-day a complete revelation.

By reason of contracted outlook we lack in ability to read causes as these relate with variety. So we come to perceive that professional knowledge—and this is very encouraging to the young men, as well as to we older ones—is a matter of study and experience: finding out what others know; keeping up with the literature of our profession; taking advantage of opportunities to observe; learning something to-day which we did not know yesterday, and hoping to get something new to-morrow; and so if some case comes to us to-day that we cannot treat properly from lack of knowledge, to-morrow we may trust to find ourselves improved in that particular direction.

Pain existed in the time of Galen as in the present time. You recollect the saying attributed to him that “the cause of toothache is known alone to God.” The Chinese are credited with the discovery of cause of this particular ache as lying with a worm, and deemed him ignorant who required other proof than was to be found in splitting a complaining grinder. Query, To what does the extreme modern bacteriologist attribute pain? Extremes meet.

Let our subject here find opening. Appreciation of the causes of pain finds understanding in diagnosis, as this lies with the processes of exclusion,—that is, putting it in other words, finding out what a thing is by first finding out what it is not.

* Part of paper read before the New York Odontological Society, October, 1891, and published in *International*, by Prof. J. E. Garretson, Philadelphia.

Let me assume to say what I have to say as to searches made after diagnosis, as illustrated in procedure, which has become by reason of long usage a kind of second nature to me.

A patient entering my clinic or office is assumed as coming by reason of not being in a state of ease; not being in a state of ease, the condition is its converse,—viz., dis-ease. As students we long ago resolved this term.

The prefix “dis” expresses a converse happily and fully. If a man be not honest, we say he is dishonest; one not being in a state of comfort, he has been discomforted; not being able, he has been disabled. The ability to say what a “dis” is depends on education. Ask a laboring man on the street as to the cause of toothache, and he will not give you a very good answer. If you ask a young student, he may not give you a very good answer either. Men find themselves diagnosticians according to understanding, education, and acquirements. We are diagnosticians proportionately with employed opportunities. Diagnosis by exclusion lies with recognition of the existence of things pertaining to a circle around which the art of diagnosis is to move. Discrimination is with differentiation. A diagnostician is to know, for example, that a particular circle contains or embraces factors; let us assume a circle having twenty factors. The virtue of his art consists in saying correctly as to a particular factor out of a possible twenty related with this circle which may be at fault. It is the extreme of his art to be able to demonstrate that a *dis* lies with a twentieth undiscoverable cause in showing that it is not any other one or more of nineteen other causes or *dises*, to the discrimination of which his knowledge is equal.

To make illustration. In the museum of our college at Philadelphia is the skull of a man who suffered untold agony from neuralgia affecting all the branches of the right trifacial nerve. No diagnosis was reached, nor was any one of a multitude of agents administered for his relief of the slightest service. Post-mortem examination revealed a spicula of bone growing from the border of the ovale foramen and piercing the nerve. This case may well be set down as the twentieth cause of a circle to be considered,—a circle of jaw pains, the first factor of which we shall assume to be a tooth decayed to an extent that exposes its pulp. The latter is simplicity itself; the former is identical with obscurity. To be able to know or to diagnose any pain in or about the jaws is one with knowing about all the possible factors. Who of us are so wise?

There are cases of obscure pain in the jaw regarding the origin of which we are entirely at a loss. We ask ourselves vainly as to

the "dis." If the experience of the members of this Society is akin with mine, they often find themselves compelled to wait a long while before finding that a supernumerary tooth is working itself down through a bone, and is worrying it.

I had recently a peculiar case in a young gentleman sent from a distant State, who was suffering from a trouble situated about a tuberosity of the upper jaw. As I happened to cure him, I may explain that it was done by a greater familiarity with a circle of possible causes than was possessed by a physician at whose hand he had been treated. I found on examination nothing particular out of the way in his jaw, except an unnatural broadening of the part complained of. It looked like an ordinary hypertrophy, not like a congestion. I made a cut through the swelling, finding what I had never met with before,—a supernumerary wisdom tooth.

Another case may be offered as being suggestive. Dr. Roberts, who, by the way, has died lately, had a conversation with another dentist, about a patient who was inferred to have cancer of the upper jaw. It was certainly a very ugly-looking jaw. It was in a softened, carious, broken-down condition, and the supposition seemed reasonable that the lesion was that of sarcoma. Examination impressed me that it was not unlike ordinary cases of sarcoma, as these are met in clinical practice. After two or three visits I proceeded to scrape away the soft and offensive mass, and found situated in the nasal process of the maxillary bone a long cuspid tooth. I took it out, and the man got well in a few weeks. Not only the man in the street, but also some of our young friends, would have said, on seeing such a jaw, "This is cancer." That is certainly what I thought on first looking at it.

I had a case recently, where a superior maxilla was seen to be very much enlarged externally; but when I looked into the mouth, I found the jaw edentulous, and yet in one of this man's antra I exposed five teeth.

Let us review or recall diagnostic signs as lying with pain itself.

We are to remember that, by reason of causes or conditions, pain varies from simple departure from ease to unbearable agony, and this not at all as significant of danger or the absence of it, but as expressions of location; example of the former is to be made by reference to pneumonitis, or, better, to Pyer's patches in typhoid; of the latter to pulpitis. All are familiar with the stitch in the side of pleurisy. To hear this last complaint from a person leads at once to the diagnosis of pleuritis. Acute and throbbing pain in the region of cellular tissue points with certainty to a developing

boil or carbuncle. Obtuse and heavy pain located about the liver or lung points to inflammation of these organs.

A bone inflammation is expressed in a sense of gnawing; a skin inflammation is located, even under one's unremoved clothing, by an itching combined with burning that is indicative of it; the conjunction of itching about the glans penis and stone in the bladder is familiar; coxalgia, as pointed out by pains at the knee; neuralgia, as differentiated from inflammatory pain by its sharp and lacerating and shock-like expression; throbbing, as denoting approach to suppuration, etc.

The first and most common cause of jaw pain is odontalgia; significant of:

1. Exposure of tooth-pulp.
2. Peridentitis.
3. Sensitive dentine.
4. Confinement of gas or pus in a closed pulp-cavity.
5. The presence of granules of osteo-dentine in a pulp.
6. The recession and absorption of gums and alveolus.

These are familiar, every-day experiences, too common to need else than attention being called to them in a preliminary way. To these are to be added the pains of the dentitional period, etc.

Following these I would place syphilis of the tertiary form; undeveloped teeth: first, wisdom-teeth of lower jaws; second, supernumerary teeth; third, anomalous or unique growths.

Next, rachitic conditions in children: the discomfort lying here in a loose relation of the teeth with their sockets. Diagnosis is plain, relating as it does with a prevailing cachectic state.

I would place next, drawing on my own experience, pains in the mental region of the lower jaw that strike a patient suddenly, increase gradually, being soon seconded by a puffy inflammatory enlargement of the whole chin region, indicative of a free effusion of a plastic lymph, and which has its termination invariably in the loss of the teeth of the region by exfoliation in the shape of sequestra of the alveolar process.

Next is to be placed a dull, heavy, demoralizing pain, situated in the region of a cheek, where cause lies with closure of an artificial opening of an antrum, in which inflammatory change has destroyed the ciliated expression of the mucous lining of the cavity, and where, consequently, the secretion lodges and remains on the floor of the cavity.

I have had patients come to me from the distance of a thousand miles to consult, where the whole fault, if I may be pardoned for the suggestion, lay in the attempt of a dentist or physician to

close a break in the antrum. I do not allude to those slight breaks that occur in extracting teeth, for such breaks close themselves. The condition referred to is where there has been a degenerative inflammation that has removed a portion of the floor by sequestration. Physiological changes in the mucous membrane have here occurred, which make closure of the break one with retention of the secretion. In my own practice, where an antrum has remained open some time, and where there has been a general inflammation about the part, I always advise keeping the break open.

Next, erysipelas. This specific inflammation, when appearing on the face, expresses itself primarily as of deep origin. A person will complain of pain about the head and jaw, situated principally over the malar bone. The part is sore on pressure. You look into the mouth of the person, but see nothing. You wait a few hours, and now find a developing tension. Here is plainly shown a perversion of the circulation, indicative of inflammatory change. A little later the blush expressive of erysipelas is seen. I have never known a case of local erysipelas that would not yield to a direct application of iron, quinine, and cinchona. A wide-thinking man may accept this specific, yet will not be deterred asking as to probable constitutional conditions. The prescription is as follows :

R. Tinct. ferri chlor..... ʒ i
 Quiniæ sulphatis..... ʒ i
 Tinct. cinchoæ..... ʒ ij M.

The affected part is to be painted and repainted till the red blush disappears.

This is not an agreeable application ; it blackens the part. I have found from hospital experience that the ordinary benzoinated oxide of zinc ointment is a salve that may at times happily and efficiently replace it.

Next, malaria pain. Malaria pain finds expression, malaria being the "dis," in a lack of comfort about the teeth that is not easily described. The patient complains of an uneasy sensation in the organs. You find them perfect, perhaps, and are led to an inference of malarial relation through practice of the process of exclusion. Taking, say, twenty possible causes, of which malaria is set down as the twentieth, and not finding the trouble related with any one of the nineteen other causes, one only remains, namely, malaria.

Do we know certainly how many causes there are in the circle of jaw pain? No, we do not. So, sometimes we must feel our way by means of treatment. First, in a case of inferred malarial poisoning, as just referred to, the way is felt to an endorsement of our

conclusion by putting a person on antimalarial treatment,—not big doses of quinine, because that is not always good. If any of you have lived in a malarial region, you know that accompanying the malaria there is a sense of depression and a sense of good-for-nothingness,—a patient not being absolutely sick,—certainly not reasonably well. I take the liberty to suggest in such connection a remedy which, when you are feeling your way for a diagnosis, may do some good in way of helping both you and the patient. I know of but few instances in which malaria has not yielded to this prescription:

R. Cinchonæ rubra pulv..... $\frac{3}{4}$ i
 Serpentariæ virg..... $\frac{3}{4}$ ss M.

To be put into one and a half pints of water, simmered into one pint, strained when cold, and one pint of Lisbon wine added. The dose is two tablespoonfuls three times a day; best taken just before meals.

ABNORMAL CLOSING UP OF THE MOUTH.

In 1867 a little girl six years old was badly salivated, which caused the loss of her first teeth, and holes were eaten through her cheeks. At seven years of age, as the parts began to heal, the gums and flesh on the upper and lower maxillary began to unite, closing gradually toward the front. Lips at the same time growing together and uniting solidly with both maxillary till an ordinary pencil could only be inserted in the mouth, when an operation was performed by a surgeon; can't ascertain extent, but mouth was partly opened. At eighteen years of age the mouth had grown up again so that only the little finger could be introduced, when an M. D. was called, who made a partial incision and a few teeth were extracted. Nothing being done to prevent the parts from uniting, the mouth soon closed—so that only a small pea could be introduced. At nineteen years of age two M. Ds. were called and operated, but to no purpose, as again nothing was done to prevent the parts from uniting. At twenty-eight years of age the mouth had almost entirely closed, and the lady was reduced to a skeleton, when two surgeons operated, taking out several teeth. The lady improved in health, and is now stout and active and the mother of several children. The mouth is closing again rapidly. Only the blade of an ordinary case-knife can be introduced in the mouth. The lady tells me she can feel a few teeth with the tongue, though the tongue can only be used slightly for

want of space. Strange to say, all of the teeth that have been extracted have had the face or cutting edge turned toward the tongue. I have been watching the case a few months, and I have my ideas about the treatment and an appliance to prevent the parts from uniting after an operation, but I would like to have the advice of the profession through your valued journal or otherwise. What is the best appliance made, now on the market, to keep the parts separated after an operation?

Dr. Norris, Stephenville, Texas.

A FEW HINTS.

The best way to make an amalgam carrier is to use a *saw* instead of a file in making the serrations, and cut them deep enough to retain indefinitely the amalgam with which they are to be filled. Then in picking up pieces of amalgam *slide* the carrier on the surface of the piece instead of pressing squarely on it.

Experience has convinced me that the best way to use amalgam is to mix it in two or more grades of dryness, using the softest first.

I have for years successfully filled more than ninety per cent of cavities having the pulp entirely uncovered, but healthy, by first covering the pulp with a mixture of creasote and oxide of zinc; then beginning with amalgam so soft that it would flatten if let fall only a few inches, adding pieces gradually mixed a little more and more dry till at last the surface is so hard that the burnisher will move over it with a creaking sound. The creasote and oxide of zinc mixture is made of such consistence that it can be carried on the point of an instrument and spread over the pulp without pressure, and in sufficient bulk that when the creasote is carefully absorbed by a piece of very soft spunk it will form an arch that will resist the slight pressure needed to place the soft amalgam in position. All the material placed in such a cavity should be warmed just before applying to the cavity. I do it successfully by passing it a few times a short distance above the flame of a spirit lamp, on the instrument that is to carry it to the cavity.

If you have put in a filling and the patient returns complaining that the cold air, etc., makes it ache, you need not remove the filling to place a non-conducting material between it and the nerve, but may secure the same benefit by coating the *outer* surface of the filling with any non-conducting material that will be retained in place for a few days.

D. Scott Thomas, Somerset, O.

MY EXPERIENCE WITH COPPER AMALGAM.

I find by looking back in my register, that I first began the use of copper amalgam about January 1st, 1889. I have kept a record of every filling put in, and find I inserted about one hundred, when I discontinued its use as unreliable. I was first induced to begin its use on account of its being highly recommended by many reliable practitioners and dental societies, to fill a long-felt want. It was specially recommended for filling sensitive cavities, cavities in soft teeth, shallow buccal cavities, large approximal cavities in molars, labial cavities extending below gum lines; and particularly in filling in close proximity to the pulp. This was the filling I had been looking for ever since I began practice.

My motto in doing all kinds of work is, that whatever is worth doing, is worth doing well; and I took just as much pains in preparing and filling with this material, as though it were gold. I have tried grinding it a little, and grinding hard; mixing and squeezing dry, and working soft; heating it a little till the sweat just started, and heating till it perspired like a ladle carried in a stove foundry. There was little, if any, difference in the fillings; they were all failures as far as I have been able to discover, and a greater part of them have been replaced with something more reliable. I shall not attempt to offer any scientific explanations or theories, as I believe that practical facts are what we want. The fact that one hundred of these fillings put in during one year should fail, and need to be replaced, in from six to fifteen months after being inserted, should convince anyone, that copper amalgam is unworthy the confidence of the profession.

I beg leave to differ a little with the "Ohio Journal," regarding their interpretation of the copper amalgam squeek. Although only acquainted with the animal a short time, I should translate it: Keep me out! Don't put me in! I am a total failure in all mouths!

Dr. William H. Steele, Forest City, Iowa.

To take a bite, stand on right side of patient, and place wax in the mouth in proper position, with right hand over the chin of patient. Tell him to close his mouth, and at the same time press with your hand backward and upward with a firm steady pressure. Don't press to one side. They *can't* bite too far out.

I think the *ITEMS* decidedly the best dental journal published. "Long may she wave!" *J. A. Frazier, Marion, Ala.*

DIFFICULT DENTISTRY.

Thomas N. Holloway of White Heath, a brother of Mr. Holloway of this city, called on us recently and gave us a bit of information which reflects much credit on Dr. E. Blackshaw as a dentist. Mr. Holloway was a member of Company G, One Hundreth Regiment, Indiana Volunteers, and on the march with Sherman he received a minie-ball in his face, which took out part of the lower jaw and almost all the teeth in the lower part of the upper jaw. Fifteen years ago he had the last tooth in his head taken out. This left him without any means of masticating his food. The government offered to pay for a set of teeth if they would do any good. He visited dentists in New York, St. Louis, Indianapolis and Cincinnati, who said they could not do anything for him, unless to help his articulation. March, 1891, he visited Dr. Blackshaw, who believed he could make a set of teeth which would do the business. The government then sent authority to go ahead and make the teeth, which he did. He can now masticate his food almost as well as ever. The depression in the jaw made it necessary to fill with soft rubber, and the peculiar shape of the jaw, on account of the wound, made it almost impossible to make plates to fit it. The doctor should be very proud of his success.

—*Urbana Herald.*

ALUMINUM.—The following, recently published data on aluminum, are of interest: Hoffman, in 1722, announced the theory that alum earth was a distinct base. Marrgraff, in 1754, announced definitely his theory of alumina as a distinct substance. Woehler, in 1827, extracted aluminum. Deville, in 1854, extracted the metal at the cost of about \$50 for the first half-ounce lump, or at the rate of \$3,200,000 for a net ton. Enlarging his apparatus, he produced aluminum for \$100 a pound, or \$200,000 a ton, in 1855, and four years later, in 1859, he produced the metal at a cost of \$1 a pound, or \$2,000 a ton. This was not absolutely pure aluminum, as his methods of extraction were such as to leave impurities in his product, and these figures were mainly theoretical, as the cost of the aluminum he really produced was held at \$12 a pound, or \$24,000 a ton from 1862 to 1887. Deville used both chemical and electrical methods. He published his valuable book, "De l'Aluminum," in 1859. Castner was the next producer to reduce the cost. He brought the price down to about \$5 a pound in 1888, and later to \$3 a pound. To-day aluminum is advertised at \$1 a pound, for grades not absolutely chemically pure.

FOREIGN BODY IN THE BRONCHUS.

Wessinger (*New York Med. Journ.*, September 12th) records the case of a boy, aged 13, who, having put some brass-headed tacks in his mouth, inhaled one into his trachea, whence it passed into the left bronchus. He was seen by a doctor soon afterwards, when he was found to be suffering from spasm of the glottis, dyspnoea, cyanosis, incessant coughing, and a frothy and slightly blood-tinged expectoration. In a few days the symptoms of irritation passed away, and he seemed to have perfectly recovered. A year later he came under Dr Wessinger's care; he appeared robust and healthy, but had a slight irritative cough. On examination an area of dullness, two inches in diameter, was detected to the left of the sternum, in the region of the bifurcation of the left bronchus, with pain on percussion; the breathing here was weak and somewhat bronchial. The opinion was that the foreign body was still exactly where the former medical attendant had believed it to be. Six months later, during a fit of coughing, the tack was expelled embedded in a dark, hard, grumous substance. The physical signs cleared up a good deal after this occurrence.

—*British Medical Journal.*

THE EFFECT OF THE FILE.—The following case, as an illustration, is given by Dr. Black:

The man is fifty years old. He had fairly good teeth, but a large number of proximal decays occurred. He has been careful of his teeth apparently, to the best of his ability, and, of course, began having fillings made under the old rule of soft gold, and separations with the file to give space for operating. This went on till most of the proximate surfaces had been filled; not only filled once, but very many of them re-filled a number of times, and each time the file was used to give more space. This plan was continued up to the time when he first came under my care, only a few months ago. The mechanical execution of the fillings has been fairly good. He has lost no teeth. But the greater number of interproximate spaces are completely obliterated. That is to say, the necks of the adjoining teeth are in contact all around the arch, except the anterior lower teeth and two or three spaces in the back part of the jaw. Each time a separation has been made for room to work the space has gradually closed. In this slow process of closure of spaces the molar teeth have imperceptibly moved forward, gradually shortening

the length of the arch. The upper arch now measures a little less than four inches from posterior to posterior of the third molars, and, judging from appearances, the arch must have measured five inches, or was of average size originally. The contraction is sufficient to materially modify the expression of the countenance, and, as the gentleman is rather thin in flesh, gives the features an unnaturally pinched expression.

In this movement the interproximate gingivæ have been destroyed, in some cases so completely that there is no soft tissue between the proximate surfaces further crown-wise than the gingival line, and even on the neck portion of the roots must be but a mere trace of the peridental membrane reaching across from one root to the other without a bony septum. This slight and much crowded tissue is kept in a state of irritation by the wedging of the food against it, rendering mastication very difficult and painful.

—Review.

Dr. W. E. Dadmun says: It is often difficult to make a full upper denture work satisfactorily when the patient has only the four or six lower anterior teeth. I always try to impress on the patient the value of a partial lower plate to be used in connection with the upper. But, if only the upper one is to be made, in adapting the teeth to conform to the circle of the lower teeth, leave plenty of room for the lower teeth to pass inside of them without touching, thus preventing tipping at the back. Have the lower teeth bite on a floor or shoulder of rubber built on the upper plate from the pins of the teeth back about one-eighth of an inch or thereabouts. Also regulate the length of the bite with this shoulder, building it down toward the points of the teeth, as the case admits.

The lower teeth, biting as they do on this floor, extend a more universal pressure all over the plate, and usually prevent tipping. In nearly all cases where the lower teeth are anywhere near the normal position and the patient has common sense, a plate made in this way will be a success.

Faulty articulation is the principal cause of plates tipping.

In articulating the teeth of full dentures, care should be taken not to let the anterior teeth come into absolute contact. Let all the pressure be on the bicuspid and molars.

After adjusting the two plates in the mouth, and they seemingly articulate perfectly—to be sure of it, take a thin right-angle burnisher, tell the patient to bite hard, then try to force the blade

of the burnisher between the teeth and try to turn the blade up or down. You will often find that the plates do not come together from equal pressure, but from the unequal pressure of one side only forcing one or the other of the plates from the ridge and tipping it so that the teeth meet.

—W. E. Dadmun, in *Minn. So., Review*.

A dentist's hands, in particular, should not only look clean, but should *be* clean, and *smell* clean; and perfect cleanliness is not likely to be attained without suitable conveniences. The neatest and most handy method of washing the hands is from a running stream. It takes less water when that is an object; and it is much quicker, which is always an advantage. And it is wholly unobjectionable. Those who are not connected with water-works, will be well repaid for arranging a tank, even if no larger than a common water-pail.

It would not require a very fastidious patient to become utterly disgusted with a dentist who would put his hands into four successive mouths, and back again into the first mouth, without any attempt at cleansing, except to wipe them on a filthy napkin on the head-rest of the chair. Nor would his disgust be less were he to see the filthy water, and the filthier wash-bowl where he finally washed his hands, and the much-used towel where he wiped them.

If anyone thinks this picture overdrawn, it is only because his observation has been very limited in this direction.

Even though supposed to be clean, the dentist's hands should always be washed just before commencing to work for a patient; that the latter may know their condition, from their coolness and moisture, and may experience a feeling of comfort.

—I. Douglass, in *Ohio Journal*.

EXOSTOSIS.—A lady considerably out of health was under the care of a physician here, and her back teeth were thrown out so she could hardly get her jaws together. Most of her teeth were decayed so that I had to take them out. It puzzled me at first, but being obliged to take out some of her teeth, I found very large exostoses on the roots, so that I just split the jaw right open, the lower jaw, and a number of her upper teeth were the same way, and I have taken out all of her teeth except six lower teeth. Almost every one of her teeth that I removed had this addition, both above and below. I have some of those teeth in my office, and some of them are as large as my finger.

—W. W. Allport, in *Review*.

CURIOSITIES OF THE VEGETABLE KINGDOM.

A species of vegetable intoxicant—writes a correspondent—has been added to the collection of plant curiosities at the Washington Botanical Garden. The liquor it distills in the pitcher-shaped receptacles that hang from its stems is especially liked by frogs, which hop into these traps for the purpose of drinking it. Though the sweetish fluid is a powerful intoxicant, the batrachian customer, however wildly over stimulated, would certainly jump out again were it not that two very sharp dagger-like thorns project downward from the lip of the vessel in such a manner that Mr. Frog, in trying to escape, is thrust through the body by them at every leap, till presently he falls dead in the “liquid refreshment”—an appropriate object lesson to all intemperate creatures—whereon the plant absorbs his substance, as the ordinary whisky shop consumes that of its frequenter, and is thus supported.

—*Homeopathic News.*

Dr. Ottofy says: I think it bad practice to extract the first molar when badly decayed, with the hope that the second and third would fill the space. I do not think, with the methods we now have of saving the first molar, that generally it need be extracted, and we do not gain by that practice as much as we desire. The articulation becomes disturbed, both by the dropping of the teeth backward, forward, inward, or outward. The second and third molars seldom as properly articulate if the first molars are absent as when they remain. Also, unless the second molar moves forward we will lose an extremely large tooth, and one which is better adapted for mastication than any other, by virtue of its location and the relation it bears to the fulcrum and the muscular power exerted by the jaws. We can exert more force at that point than anywhere else; hence, when possible, it is not good practice to extract that tooth with the hope of having some other tooth do as much good.

Another thing: I am in favor of saving the third molar, and I endeavor to remove that impression which a great many people have, that the third molar is a poorer tooth than the others. It is an error, I think, to allow people to believe that the third molar is a much inferior tooth to all of the others. Therefore, I am always in favor of attempting to save and recommend the saving of the third molar.

—*Dental Review.*

A CASE OF REPLANTING.

About two months ago, a young lady came to me after having suffered intensely for several days with a left lateral, which was abscessing. I opened into the pulp canal, and gave the usual treatment for a few days, but without much relief, as so much pus had collected at the apex that it was impossible to get it back through the apical foramen.

The lady finally decided to have the tooth drawn and replanted. I extracted the tooth, and considerable pus escaped from the socket. I cleansed the tooth and socket, using tepid water and peroxide of hydrogen. After cleansing the pulp canal, I filled it with gutta-percha, and the apical foramen with gold, and replaced, using silk ligatures from centrals to first bicuspid, to connect it with the other teeth and hold it firmly in place.

On the third day she returned, saying that after the second day she had experienced but little discomfort. At the end of two weeks it had grown so solid, I removed the ligatures, and have not seen her since, but have just heard that it was all right.

T. W. Sharpe, D.D.S., McConnellsburg, Pa.

[Sufficient time has not elapsed to pronounce it a success. Let us hear how it is a year or two hence.—ED. ITEMS.]

BAKING PORCELAIN IN THE COMBUSTION CHAMBER OF GAS FURNACES.

Some persons advocate the fusing of porcelain in what they nominate the open flame, or more properly speaking, the combustion chamber of a gas furnace.

It is erroneous to expect that it will be ever practical to manufacture porcelain dentures in a reliable manner by exposing them to the action of the flame in a gas furnace. Just imagine a manufacturer placing twenty or thirty sets of teeth in the combustion chamber of a blast furnace where numerous small particles of silex and fire-brick would settle on the enamel surface, to say nothing of the detrimental effects of the products of combustion. (See ITEMS, July No., 1891.)

C. H. Land.

For practical points, the ITEMS is certainly far ahead of any dental journal in the country.

T. W. Sharpe, McConnellsburg, Pa.

Items.

I have a young patient, a miss of fourteen years, with lower left second bicuspid erupted between first and second molars. This must be a rare occurrence. Who has seen a similar case?

D. F. Smith, Centerville, Iowa.

In extirpated pulps, recently, I have had good success by the use of cocaine and nitric acid mixed to a creamy consistency, used as a painless cauter, and applied with a smooth platinum broach.

J. W. Billings, D.D.S., Union, Iowa.

EDITOR ITEMS:—I had entirely abandoned the use of cocaine in the extracting of teeth, partially from the ill effects and not seeing the benefit to justify its continuance. After seeing the formula in the October ITEMS I determined to try its use again, but found to my sorrow extreme swelling after every case of extraction, and attended by considerable pain. I then left out the chloral hydrate and did not see nearly so much swelling.

I look forward to the time for the ITEMS OF INTEREST to come as necessary to the success of my profession. May it live long!

C. G. Aven, D.D.S., Bristol, Tenn.

CURING A MUCOUS CYST.—In May, 1890, Mrs. W. applied for a full lower denture. I found on the left side, between the tongue and the lower alveolar ridge, a fluctuating swelling, about one inch in length and half inch in diameter, which seemed to contain a considerable quantity of fluid. To remove it before inserting the denture I passed a silk ligature through it laterally, tying the ends together, so the thread would be loose within the sac. This alone evacuated about a teaspoonful of a mucous-like fluid, and the ligature was left in place to act as a drainage-tube. The irritation of the ligature produced inflammation sufficient to cause the walls of the sac to adhere, and a complete cure was the result. Six weeks later I inserted the denture. Two years have elapsed, but no recurrence of the trouble.

I think this merely a cyst formed by nature for the reception of the mucus generated by a mucous gland, whose duct had become closed.

R. R. Braxton.

MELTING PLATINUM—In reply to the query of Dr. C. A. Marvin (p. 41, January), the addition of the smallest trace of bismuth will render platinum quite unworkable and totally unfit for dental purposes. I have myself had no experience with the following, but am informed, from sources I believe reliable, that a small quantity of arsenic is frequently added to platinum to make it melt and pour easily, and that if the ingot is cast thin the application of a red heat for several hours will drive off all the arsenic, leaving the ingot slightly porous. A careful hammering while red-hot will then condense the metal, leaving it in good working condition. Whether the whole of the arsenic is driven off or not I cannot say, but I should be very much disposed to doubt it.

Thos. Fletcher, F.C.S., Warrington, England.

Under the head of taking a bite, in January ITEMS, Dr. Stadlinger describes a method adopted by Dr. Poole, and seems very much enthused. I have used the same method, with the same good results, ever since I have been in practice, except that I use wax instead of paper to mark the line of lip.

Dark joints and broken blocks are attributable to the expansion of plaster. Use good plaster, and observe thorough cleanliness. Do not leave the case flaked over night, or dry out by artificial means, as is the usual custom. The joints will be opened in proportion to the dryness of the plaster. Open and pack as soon as possible after flasking, having first cut plenty of gate-ways and filled joints with either tin or gold foil; then vulcanize at once. If care is exercised in packing and closing, clean, white joints are assured.

Dr. Felker, Pittsburg, Pa.

In the ITEMS of January appears an article on the discoloration of gold in the mouth—an interesting subject to all who read it. Happening to meet an old dentist, I ventured a remark, hoping it would lead up to a discussion of the subject. The answer I received was one that reminded me of the aged Kentuckian, when discussing the quality of whisky with a gentleman who was anxious to tell his opinion of the different grades of whisky. "Believe me, sir, I have never seen or drank any that was bad," said the colonel. So I said to my friend, "To what cause do you ascribe the discoloration of good fillings in the mouth?"

"I do not know, sir; my fillings never change color."

That ended the discussion.

Willie Newcomb, New York City.

INCIDENTS OF OFFICE PRACTICE.—Twenty-five years ago, a patient came to me with a lower wisdom tooth that was very badly decayed and the pulp just exposed. Having prepared the cavity, I was somewhat at a loss how to treat it. It occurred to me to place in the bottom of the cavity over the pulp exposure a pad of white silk and rather soft amalgam over it, gradually filling up the cavity. Six months ago the case came back to me. The tooth had become very loose, and was no longer of any use, so I extracted it and split it open, and found the silk, though slightly discolored, to be in very good condition, and the vitality of the pulp had been preserved.

—E. P. Hoyt, in *Cosmos*.

A FEW RANDOM REMARKS.—When a rich man gives his money to public charity, his poor relatives never applaud.

You can flatter any man by telling him you know him to be a man who is not easily flattered.

Most men mix a pound of ambition with a grain of energy, and then wonder that the world refuses to admire the mixture.

When a poor man becomes suddenly wealthy he begins at once to forget all the things he used to say he would do if he were rich.

There are too many people in the world who think they can atone for a year of injustice and wrong by giving a handsome Christmas present and by making good resolutions on New Year's.

—Atchison (Kan.) *Globe*.

I am not a dentist at this time, yet I sometimes spend a little time in looking over the different journals, for the purpose of ascertaining whether things are progressing according to *my* ideas of right; and, while, as a rule, I endorse most of the notions as set forth as necessary improvements, there are some matters, such as the howl to be recognized as medical men, simply because they practice dentistry, causes me to suggest that such a struggle is calculated rather to lower the dental profession than to elevate it. The dentist ought to consider his calling equal to any other, and superior to many. To rise above the M.Ds. should be the course pursued.

—Extract from a letter from Ambrose Lawrence, M.D.

A plan that never fails to give a natural bite in taking articulations for artificial dentures: Have the patient open his mouth, and before closing tell him to place the tongue on the roof of the mouth and keep it there while closing. Try it yourself, it cannot fail.

—W. Goodfellow, Sussex, N. B., Canada, in *Office and Lab*.

Where a broken block is to be replaced by a new one, cut out as much rubber as possible without cutting through, make proper undercuts, etc., then fit your block between the others, and cement in position with oxyphosphate mixed thin. It is not necessary to have a perfect fit above gum. Cut a piece of heavy tin foil large enough to cover upper half of block and rubber rim—place this in position and cover with cement—mix enough cement to cover whole front of block and part of adjoining two, and hold in position till it has set. This will support the block while under pressure. You can now invest, and use plenty of rubber to force it into all interstices. After vulcanizing, you will find a nicely polished front. Instead of using wax to fill up my undercuts, I fill with tissue paper moistened. This can be taken out easily after flasking.

J. E. Ward, Bellefonte, Pa.

TACT AND SUAVIDY are needful accomplishments when working for adults, and indispensable for children. In emergencies, the operator should be quick to invent a way to bridge it over; and, when practicable, should conceal his dilemma from the patient, but not deceive.

A few days ago, I was putting in the last one of many fillings. The tooth was a left upper lateral incisor. The anterior proximate side had been filed away before coming to me. After removing what had been softened by decay, the cavity was extremely shallow, the dentine being opaque further toward the pulp. When the cavity was three-fourths filled, I broke through to the pulp; this being the first case of the kind in forty years' practice. I revealed my dismay by the expression, "Oh, pshaw." The secret once out, I explained to the patient who remarked that it did not hurt. Having removed the filling and putting a sharp drill into the engine, I went to the pulp from the highest portion of the cavity. As soon as the drill struck the pulp I put in some crystals of cocaine, rested five minutes, then resumed with the drill, till an opening was made sufficient to introduce a barbed broach. Put in some more cocaine, rested ten minutes, then with the broach removed the pulp entire. The patient then remarked that she had not suffered much. I then washed out and filled the root canal, and filled the crown cavity. The patient seemed more delighted with the results than if the accident had not occurred, remarking that the operation was not as painful as the separation of teeth with the separator.

—Isaac Douglass, in Ohio Journal.

Monthly Gossip.

BY WM. E. BLAKENEY, D.D.S.

THE EXCESSIVENESS OF POST-MORTEM EULOGY nowadays is simply wonderful.

THE PHONOGRAPH is now used in hospitals for the purpose of studying the auditory characteristics of pulmonary disease.

"IF OPTIMISM WERE UNIVERSAL," says Dr. C. E. Bentley, "how filled with mythological gods our Pantheon would be."

"ALL SORTS," is the heading to a new and interesting department in the *Ohio Journal of Dental Science*.

DR. B. S. SCOTT, believes "the noblest mission of man to humanity is the alleviation of suffering of every kind, whether physical or mental."

DR. J. TAFT says he uses pepsin with satisfaction in the treatment of exposed pulps that are encumbered with much disorganized tooth structure or other débris, and that it has a good and satisfactory action.

THE BRITISH MEDICAL JOURNAL is of the opinion that it requires no prophetic power to foresee that we are on the threshold of discoveries in medicine, such as will eclipse in their splendor all that have preceded them.

"THERE IS NOTHING," says Dr. Perry, "so effective in the management of a dental practice as to feel for the patient, to put yourself in his or her place." A noble sentiment, doctor, and I wish it was echoed by the entire profession.

VON MOSETIG-MOORHOF is reported to have said that "operative dentistry is a specialty of surgery; those who practice it must consequently be acquainted with at least the fundamental principles on which surgery is based. Now, the fundamental principle of modern surgery is antiseptic, and the dentist ought and dare not practice without it."

IT IS SAID THAT ALUMINUM can now be soldered as easily and as firmly as copper or sheet iron, and that the metal is as acceptable to the tissues of the mouth as any metal that is used for dental purposes, and being well adapted to the parts makes one of the most comfortable artificial dentures that is made.

DR. J. TAFT, in a paper on dental hygiene, says: "The necessity for cleanliness has not been urged as it should be, too much

attention having been given to general health as compared with the health of the mouth. It is just as important to clean the teeth of the patient and urge cleanliness, as it is to treat an abscess or fill a carious tooth. It is the dentist's duty to insist on cleanliness."

LYSOL IS A COMPARATIVELY NEW ADDITION to the list of disinfectants. It is a thick, light-brown liquid with a specific gravity of 1.042. It is perfectly soluble in water, and forms a clear solution in contradistinction to creolin, which forms a milky, opaque emulsion. In washing in a solution of lysol it forms a lather, and thus, while exerting the action of a disinfectant, it plays the part of a soap. It therefore has the advantage of easily and rapidly permeating tissues with which it is brought in contact.

DR. OSLER, OF THE JOHNS HOPKINS UNIVERSITY, of Baltimore, in company with Dr. Ellis, of Elkton, Md., examined the four months' old infant of Joseph Deaver, residing about three miles from Elkton, that died recently of pneumonia. About the second day after the child was taken sick its flesh began to harden, the ossification beginning in the feet and extending till it reached its head, when the child died. Its flesh became hard as wood clear to the bone. It is said that this is the first case of the kind ever known in this country.

DR. OTTOLENGUI contends that gold loses its cohesive property in proportion as it is condensed, and that "the principle then is to begin with a piece just large enough to be wedged in without lateral pressure; and to add next a similar piece, or one even smaller, so that it will readily reach the first, and cohere with it before any great pressure has been exerted. In other words, it should be condensed after it has cohered, instead of before. This one principle observed," the doctor believes, will "make proximal fillings permanent, which would fail where it is neglected."

CARBOLATE OF CAMPHOR is made, says the *Therapeutic Gazette*, by adding one part, by weight, of carbolic acid to three parts of camphor, setting aside for twenty-four hours, and straining through gauze. It is a permanent liquid, with a specific gravity of 990. It is thoroughly antiseptic, and possesses unsurpassed germicidal powers. Locally applied to wounds, by means of cotton or gauze, it prevents suppuration. When kept in contact with the skin for several days it produces an eruption, which can, however, be prevented by mixing the liquid with oil. Injected hypodermically it gives the best results in aborting abscesses or boils and relieving pain.

IN A PAPER read before the Students Dental Society (U. of M.) V. A. Latham gives the following sound advice: "In the examina-

tion of a mouth for disease, we should cultivate as early as possible a habit of thoroughness; we should not be content with looking at the teeth, but inspect the gums which so often disclose much about the condition of the roots of the teeth by the appearance of the surrounding parts. If any abnormality be present examine for the cause with every care, and then decide on the treatment and remedy, noting at the same time the idiosyncrasy of the patient."

THE EDITOR OF THE DENTAL REGISTER pleads earnestly with the profession to make a creditable showing at the World's Fair. He says: "We hope to have a very large exhibit of instruments and appliances that were used in former times, both to torture and relieve, and also many of the best and latest inventions in use at the present time, and by a comparison of the two we shall be the better able to judge of what science has done for us in the last two centuries at least, and no doubt shall find that the improvements in dental apparatus and workmanship have kept pace with those of all other trades and professions."

DR. BENTLEY entertains sound views on dental education and colleges. He thinks "No person should be eligible to the candidacy of studentship till he has passed an examination before an examining board, which had been authorized by the State Board or the American Dental Association to determine his fitness for the same; and that this examination should refer only to the literary qualifications of the applicant, and should be commensurate with the subjects the student is expected to study. Also, that a certificate from the examining committee, together with the additional requirements that not less than one year shall have been spent in an office, which should give entrée to any dental college without further requirements."

MRS. A. J. DEVERAUX, who has been practicing dentistry in New Haven, Conn., since the death of her husband which occurred recently, complains that "men have formed a conspiracy to drive her out of business." She acted as her husband's assistant for twelve years and is said to be competent. A few days ago while she was operating on a patient a man walked into the room and demanded her diploma. Mrs. Deveraux consulted a lawyer, and found that a diploma was not necessary. Since then she claims to be "shadowed by men." Not men, I think, but brutes. Surely women have some rights that men are bound to respect.

Dr. L. Betts, of Du Quoin, Ill., says he has just examined a tooth that he replanted three years previously, several days after it had been extracted, and that it has grown firmly in its socket.

Our Question Box.

WITH REPLIES FROM OUR BEST AUTHORITIES ON DENTISTRY.

[Address all questions for this department to DR. E. N. FRANCIS, Uvalde, Texas.]

Question 7. *Dr. Ottolengui advocates soaping impressions for separating, and says: "Never varnish plaster under any circumstances, except for molding in sand." I am young in the profession; have been taught to use varnish, and would like to know wherein soap is superior to varnish?*

Twenty years' success with varnish makes it good enough for me.

Jno. C. McCoy, Santa Ana, Cal.

Have used varnish, soap and shellac. Prefer the latter. It makes no difference what is used, if you secure a smooth cast. *F. P. Webber.*

I think varnishing impressions good when not used too thick; soap is also good, but I prefer varnish, as it seems more convenient to me.

J. W. Smith, D.D.S.

I think impressions should be varnished with thin shellac, simply to color, and then soaped. Thin sandarach can be used in place of soap, with good results.

J. E. Crothers.

Though I use varnish, as it is more readily seen in separating, where cutting of impression has to be done, I think soap is sometimes better. I find a very thin film of soap will do equally well the work of a more generous layer of varnish.

A. W. Davisson, D.D.S.

For me soap has no advantage over varnish. I prefer the latter as being more agreeable to my hands. I have used soap, and if there is anything to be gained by it, I have failed to discover it.

E. D. Eddy.

After an experience of thirteen years in the use of varnish, on models and impressions, I shall not give it up because some one with an unpronounceable name advises it. Much of the time I do not use varnish at all, but oil impressions, taking care to rub in well.

L. D. Wood.

I always varnish with thin shellac, then apply soap. I never use the one or the other separately. I do not know that one is inferior to the other, but have always obtained best results when using them together. Never use oil in place of soap, as it usually makes model full of air-holes.

Malcolm W. Sparrow, D.D.S.

Soap-water is better for brushing over impressions, as you are not obliged to wait for drying; again, it will fill the air-holes better than varnish, and will thus prevent air-holes in cast. A good substitute for soap is fine yellow wax, dissolved in turpentine and flavored with oil of bitter almonds.

W. S. Elliott, D.D.S.

I use shellac for separating models from impressions, and also to separate flask. Know of no reason for not, unless for fear it would change impression by filling it up, which I think a good thing; where mouth is soft, I varnish impressions several times over. I use soap sometimes, as the impression separates easier.

J. A. Robinson.

I never use plaster impressions. I abandoned it many years ago as unsatisfactory. I do not think a good, practical impression can be taken with it. If the ridge and arch were of the same consistency in every part, like a silver dollar, then plaster will do, but it is not so—one place is soft, another hard. Plaster presses equally, and the plate, especially if atmospheric, will adhere to the hard places only, and soon come down. Modeling composition (I use No. 2) can be pressed, not only firmly against the hard parts, but will press the soft parts down; then a plate can be made of uniform pressure and be comfortably worn. Even with this advantage, it is frequently necessary to cut away the soft parts, so as to get uniform pressure.

U. Smith.

I think soap-water is equal to varnish, if good toilet soap is used. Strong lye soap will soften the face of model and cause it to wear away. Color the soap-water with a little vermilion or Venetian red, and coat impression. This leaves a beautiful red surface, which will show distinctly the line between impression and model. The soap-water is more easily applied if in an open vessel, where the impression or face of flask can be immersed. It is more easily and quickly prepared, and much cheaper than varnish. It has never failed me as a separating medium; it spreads evenly over the surface and is of uniform consistency. For six years I have used nothing but soap-water, and my work has given entire satisfaction.

John K. Moose, D.D.S.

The soaping of impressions has a tendency to soften the plaster, and when the plaster is poured into the impression the soap combines with the water and interferes with the setting of plaster, resulting in a very rough surface on which to vulcanize or make good sand casts. When metal dies are to be made, shellac casts. Experience has shown that sand will part from a shellaced surface better than any other varnish. On the contrary, plaster will separate from a surface of gum sandarach varnish much better than any other substance; therefore, use sandarach on impressions and shellac on plaster casts for metal dies. I know many members of the profession object to the use of varnish, having in view a vague notion that it might interfere with a perfect fit. A thin coat of varnish does not measure more than the two thousandths part of an inch; therefore no practical difference could follow on such a thin basis. The flexible tissues of the dental arch will always conform to a reasonable proximation of its shape.

C. H. Land.

Question 8. *How can modeling composition be freed from dirt, plaster, etc.?*

I pick the pieces out of the composition.

U. Smith.

By continuous kneading while warm, and forcing plaster to surface.

W. S. Elliott, D.D.S.

All adhering plaster should be cut from impressions soon as separated from cast, but if dirt becomes mixed with the compound it should be thrown away.

J. E. Crothers.

Soften the compound and pick out the bits of plaster, etc., with knife. Clean soon as separated from model, and keep in clean box.

John K. Moose, D.D.S.

When removing composition from model, brush off all plaster with stiff brush before working it into shape for laying away. Work all particles to surface and wash off with brush and hot water. This is the only way to keep it clean, and a piece can in this way be kept clean and serviceable for a long time.

Malcolm W. Sparrow, D.D.S.

Melt and strain through fine wire cloth. Some care is required to avoid burning, as it must be quite hot in order to strain well. Shape the wire cloth into the form of deep bowl; the rim being turned over a ring of stiff wire, with a part of the wire projecting a foot, to be used as a handle. When the strainer becomes clogged with dirt, throw it away and make a new one for the next time.

E. D. Eddy.

[Many of our answers shoot clear of the mark this month, and touch the questions very lightly, but the differing opinions of our friends will be of interest to many readers.—E. N. F.]

Question 9. *Would five gold caps of 21-karat, produce brassy taste in mouth of any patient. Have patient who says it does; also giddiness, etc. Her physician says, as does the patient, it is the alloy in the gold. I say it is not possible. What are the facts as brought out by all metallurgists?*

O. B.

We have heard of people who could smell onions five miles away, and have known of cases where patients could taste amalgam fillings two years after they were removed.

People with these wonderful gifts have more imagination than good sense. That physician should go under treatment at once. If the caps are 21-karat, no amalgam fillings near them, and patient has not been dosed with mercury, you have a case of monomania, and our sympathy. Can any reader of the *ITEMS* make any suggestions?

Question 10. *What are considered the most reliable symptoms to indicate the proper time for operating during the administration of nitrous oxide gas, and why does it effect some people but slightly?*

Operate soon as the muscles of tongue and throat relax; indicated by snoring. I do not use gas now, but when I did, the above proved a satisfactory guide with rare exceptions. *E. D. Eddy, San Mateo, Cal.*

I consider the best time to operate, on patients, is when they are completely under the anesthetic. I believe from personal observation that failure is due largely to faulty administration.

J. W. Smith, D.D.S., Champaign, Ill.

By stertorous breathing, or insensibility when finger is placed in the open eye. When patient's physical condition is normal, and operator understands the administration of nitrous oxide, the effects are nearly the same in all cases; failure being caused from lack of proper administration or poor gas, and not on part of patient. *F. P. Webber, Cherokee, Iowa.*

This question is a physiological one and difficult to understand. The fear of some evil effects attending the administration, dread of the operation, mysterious surroundings in the dental office, and the condition of the

nervous system at time of administration, all tend to lessen the effects of the anesthetic.

John K. Moose, D.D.S., Taylorville, N. C.

Respiration is the best guide. If patient snores deeply—this does not always occur—it is time to operate. Patient may be conscious of pain and still be unable to make voluntary movements.

J. E. Crothers, Eagle Pass, Texas.

Very soon after stertorous breathing is evidenced. It is at this stage when the cerebral nerves are checked in their functioning and the anesthetic is encroaching on the cerebellum, or when the first eight pair are influenced and all the special senses obliterated. Nitrous oxide will effect some slightly when free oxygen is not entirely shut off, and also when the inspirations are short and the residual air in lungs is largely retained.

W. S. Elliott, D.D.S., Sag Harbor, N. Y.

I find reliable symptoms, with the majority of cases, to be a fixing or rigidity of the muscular system, with stertorous breathing; a peculiar blue hue about the lips, on cheeks, and under the eyes. If in doubt, I touch the eye or pinch the skin for information. Why gas effects some but little, I venture to say must be due to either very large arterial and capillary systems, or an extremely elastic condition of the same. Large lungs which readily accommodate and oxygenate the blood may hinder anesthesia.

A. W. Davisson, D.D.S., Holley, N. Y.

Twitch the fine hairs on the temple; if no sensation, operate. I never use nitrous oxide, from its extreme volatility and incompatibility with many persons. I believe it the worst of anesthetics. Often its deleterious effects are felt for months and years. It should be abandoned. I use Squibbs' ether with some chloroform and alcohol added; for children I use simple ether. Anesthetics, like everything else in therapeutics, are varied in effect. Constitutions differ, therefore no fixed rule is admissible. Less than a week ago I was obliged to abandon my efforts to effect a young man with ether and chloroform mixture, though it is usually a success and leaves no bad effects.

U. Smith, Frisno, Cal.

It is difficult to tell another person just when the patient is ready to operate on. The best way is to demonstrate it at the chair. When I used to give nitrous oxide, I sometimes touched the pupil of eye, pinched the cheek, or had the hand held up till it dropped by relaxation of the muscles. There are many people who do not become unconscious even after having taken eight to twelve gallons, and I have ceased to administer it. I have no very satisfactory theory as to why they get no benefit from its inhalation. A little chloroform is said to prolong the effects.

L. D. Wood, Grand Rapids, Mich.

For a short job of extracting, I continue to administer gas till the eye is free from sensation. For a long job, I give it till the patient snores in good shape; manifests a decided twitching of the muscles about the face, shoulders and arms, or till I cannot make them breathe more. Have taken out fourteen teeth several times; did it again this morning. Why does gas, hypnotism, liquor, or any other agent effect some more than others? It is due, I think, to a difference in organism; sometimes to will. One case comes to mind: A man taking gas gave up to the influence of it for a time, but

changed his mind and thought he would not ; perfect anesthesia to all appearances ; could not help himself, but knew and felt all that was done.

J. A. Robinson, Morrisville, Vt.

There is a stage when patients refuse to inhale more gas. There is a convulsion of respiratory muscles and deep stertorous breathing. It is dangerous to go farther, for the patient is in what may be considered an asphyxiated state. I begin operations here regardless of other symptoms. Some patients will take more, others less, before this stage is reached, and I get out as many teeth as possible during the period of unconsciousness. Sometimes it may be but one tooth, again it may be the whole upper set. The appearance of patient is usually as follows : Jaws set, eyes protruding and rolled back (when not closed), and a bluish or purple color about lips and face. Respiration is at first shallow, then deep and stertorous. There is always a very alarming and death-like appearance, which usually frightens the novice, and especially the friends of the patient who may be standing near ; but this appearance usually passed away before the operation is completed. I consider nitrous oxide perfectly safe. Have administered it hundreds of times and have never seen an alarming symptom, though I have had my share of "fun" with fractious patients. I am satisfied the effects produced on different patients is due entirely to individual temperaments and idiosyncrasies. The most troublesome patients are of highly nervous organisms and excitable dispositions. Many possess a mortal dread of pain, and they come in with their nerves worked up to a concert pitch of excitement. Many can make themselves do what is required of them, if they have a strong will power, but soon as this will power is overcome by the effects of gas, their terrible dread of pain gains the mastery, and immediately produces an involuntary resistance ; hence the degree of anesthesia is usually in proportion to how much the patient dreads pain.

Malcolm W. Sparrow, D.D.S., Toronto, Canada.

SUBSCRIBER:—The Chase combination plate is a patented process, regarding which we can get no information from headquarters.

There are many formulas for tooth powder, and opinions differ regarding the best. Some patients require a fine powder, others one that is quite coarse with astringent or antacid properties. We will be pleased to publish your formula.

The following is a good tooth wash :

White castile soap.....	3ij.
Alcohol.....	3ijj.
Honey.....	3j.

Perfume for above :

Asarum canadense.....	
Orris root.....	āā 3j.
Strong alcohol	Oj.

Make a tincture and add

Tincture musk.....	3j.
Essence of millefleurs.....	3ss.
Essence of patchouli.....	℥xx.

Dissolve the soap in alcohol, add honey and four ounces of the perfume.

We do not advise the use of cocaine hypodermically in the extraction of children's or adults' teeth.

I have a patient who has sharp pains up through his face. When he goes to eat, a sharp pain darts up one side of his face like a knife. I extracted the wisdom tooth, and under that was another tooth. He was better for a short time, but gradually the pain returned. The other day I extracted the left second bicuspid, upper jaw. He is a little better, but I fail to get at the cause of the trouble. It seems to be the nerve, but when I take out a tooth it seems to improve. He has not a decayed tooth in his head now.

H. L. F.

This is a difficult case to diagnose from your description. The important thing is to know what nerves of the face are effected by those "sharp pains" in order to locate the trouble.

As mastication causes pain, and all decayed teeth have been removed, it will be well to try percussion on all teeth to see that there is no sensitiveness; but first examine that tooth discovered after the removal of the third molar. If it is inclined to erupt, favor it by lancing the gum, and, if necessary, remove a portion of the alveolar. If this does not relieve the pain, and you find the tooth sensitive to pressure, extract at once. In these cases it is well to make a thorough examination of the face for any enlarged or sensitive places, especially in the neighborhood of the antrum.

Why don't the plates I make by remelting wax I buy at the depots have the same strength and work like the original?—J. A. R.

If in melting wax it is overheated it is ruined. Wax should be always melted in a water-bath. There are many ways of treating wax, and without a full description of your method we are unable to tell wherein you fail. Bleaching, coloring matters, the manner of forming into sheets, and the addition of a little Venice turpentine, all have a tendency to toughen wax.

DR. H. A. SMITH in speaking of sterilization of dentine before filling, says: "It is often best to leave a portion of decalcified dentine as a protection to the pulp before filling. This protective layer is full of micro-organism, and must be sterilized. If sterilized, it forms one of the best cappings. In order to disinfect this, the agent must not coagulate, and must be diffusive, so as to insinuate itself as far as the bacteria have penetrated. The essential oils are the best for this purpose. Equal parts of oil of cassia and oil of cloves are non-irritating. Dryness is quite necessary in this treatment, since water opposes penetration and diffusion. The use of alcohol and hot air is the best method of desiccating."

DEATHS.

Died at Clearfield, Pa., on Monday, February 1st, 1892, of cancer of the stomach, Dr. James M. Stewart, aged fifty-four years.

Dr. Stewart was born in Huntingdon county, Pa., on January 4th, 1828. He studied with the late Dr. M. L. Logan, of Logan crown fame, with whom he remained till 1869, when he matriculated at the Pennsylvania College of Dental Surgery, graduating two years later. Immediately after graduating he opened an office in Curwensville, Pa., where he practiced six years, when he removed to Clearfield.

He was a member of the State Society, and was at one time President of the Central Pennsylvania Dental Association. He enjoyed a lucrative practice, and had the reputation of being one of the best dentists in Central Pennsylvania.

He was a man of exceptionally fine social qualities and a Christian in the highest sense of the word. He is survived by his widow and one son.

The following resolution was passed at the last meeting of the Board of Directors of the Philadelphia County Dental Society:

WHEREAS, It has pleased our Heavenly Father to call to rest Dr. Chas. A. Kingsbury, our friend, associate, active member, and one of the founders of this society; therefore, be it

Resolved, That we desire to express our high esteem for one whose faithful and earnest work is widely known throughout the profession; and,

Resolved, That this record of our deep regret be entered on the minutes of this society, and a copy of these resolutions be sent to the dental journals for publication.

L. Ashley Faught, Secretary.

A sad death has occurred among the senior students of the American College students. Harold W. Morse, a promising student from Naperville, Ill., died of typhoid fever, January 21st, while attending college.

Texas has lost a venerable land mark in the profession of dentistry, in the death of Dr. C. C. Thomas, of Houston. He was for forty years an active practitioner.

New Publications.

COAL GAS AS A FUEL.

Coal Gas as a Fuel and Light, by Thomas Fletcher, F.C.S., Warrington, Eng. As with everything Thomas Fletcher publishes, there is here an evidence of thoroughness, of personal study and experience that few display. As this subject is of interest to dentists, we will give some extracts to show the general character of the work :

METERS, TAPS, AND FITTINGS.—The capacity of a meter is calculated by the number of lights it is designed to supply, each light being calculated to consume six cubic feet of gas per hour ; thus a five-light meter is calculated to pass thirty cubic feet per hour. It is a common practice to put in both meters and pipes far too small for the required duty, entailing bad and insufficient light, and also deficiency of supply for heating purposes ; probably not one house in twenty has been fitted with supply pipe to do one-half the required work without excessive pressure, and perhaps the simplest remedy is to get the gas company to put in a meter of sufficient size, which will be done usually without any charge, as the meter and the pipe to it are the property of the gas company. The old pipes from the meter can usually be left undisturbed, and a new supplementary pipe taken either direct to the place where it is required or led into the old pipe after some of the supply branches have taken part of the gas away, thus reinforcing the supply as it becomes reduced.

Leakages can be easily detected by leaving the meter tap full on and closing all other gas taps in the building. On all meters will be found either a dial indicating one cubic foot of gas, or a small drum behind and above the dial, which is marked to indicate the passage of one cubic foot. If, when the meter tap is open and all other taps closed, the drum or dial shows no appreciable movement in two or three hours, the leakage, if any, is unimportant. If the drum or dial indicate the passage of, say, one cubic foot in two hours, the loss by leakage is twelve cubic feet per day, or 4,380 cubic feet per annum, and the pipes should be examined.

GOVERNORS.—If the meter and pipes are sufficiently large to supply the required gas without excessive pressure, the use of a *good* governor is most advisable, as it prevents roaring of lights and does away with irregularity in cooking and heating.

PRESSURE OF GAS.—The pressure at which gas is supplied is measured by the height of a column of water this pressure will support. The usual day pressure out of London and Birmingham is equal to one inch of water, and the gas consumption of burners is usually given at this pressure. It is invariably increased at night when there is a heavy demand on the supply, and in the absence of a governor the gas consumption may be greatly increased, in many cases without any corresponding advantage. In the absence of any special apparatus for testing the pressure this can easily be obtained by partly filling a narrow glass bottle with water, and inserting in this water a glass tube connected by an elastic tube to any gas supply. The water in the tube will be forced down below the level of that in the glass, and the difference between the two will be the pressure at the time of testing. The variation of pressure on an ungoverned service is the cause of irregular cooking, even when greater care is exercised than when a governor is used.

It is generally accepted that any meter will work nearly to double its capacity if the pressure on the mains is sufficient, but meters and pipes are often expected to do four or five times their nominal work, without consideration as to whether the meter registers correctly at the excessive speed or not, and, unfortunately, the gas and the gas company are blamed unfairly.

BRAZING BAND SAWS AND STEEL INSTRUMENTS.—It must be borne in mind that the flame of a coal gas blowpipe oxydizes and scales steel very rapidly and deeply, at the same time burning out the carbon from the surface of the steel and destroying its nature. Band saws brazed by a gas blowpipe are specially liable to break again at the joint, and for these the old-fashioned way of brazing by a heavy pair of red-hot tongs is to be advised, in preference to the use of a blowpipe. In cases where steel has to be treated by a gas blowpipe the surface can be protected by the use of soft soap, which fuses into a glass and protects the metal, but this cannot be used on surfaces which have to be brazed. Where tough joints have to be made to stand heavy strains, such as the brazed joints in band saws, ordinary spelter should never be used; the proper alloy for this purpose is a mixture of 11 parts pure silver, and 13 parts pure copper, melted together and rolled into a very thin sheet. With this alloy a butt joint can be made on an iron or steel wire, which will afterwards bear tying in a knot without the joint parting.

At day pressure = 10-10ths on the gas supply, a half-inch pipe with a half-inch bore tap will supply to a burner about $1\frac{1}{4}$ cubic

feet per minute, or 75 cubic feet per hour. A one-inch bore pipe and tap will supply about 5 cubic feet per minute.

The above must be taken as the maximum supply when the gas is exhausted from the pipes, as it is with a blowpipe, and also if the pipes specified are not very long, and are supplied from a pipe of larger bore. This rule does not apply under any other circumstances.

About 20 cubic feet of 18-candle gas equals one pound of coal or one pint of methylated spirit in fuel value, and, therefore, a half-inch gas pipe will supply at the rate of one pound of coal, in a gaseous form, in 15 minutes. To burn this in a blowpipe, an air supply of about 7 cubic feet per minute is required.

ATMOSPHERIC BURNERS.—All atmospheric burners depend on three parts, which must be in definite proportion to each other; any alteration which reduces the capacity or power of any one of these parts reduces the whole power of the burner in proportion. These points are: The size of the gas outlet, the diameter and length of the mixing tube, and the area of outlet for burning the mixture. Approximately, the diameter of the outlet in the gas nipple must not exceed one-eighth the diameter of the burner tube for 16 or 18-candle gas; the length of blank tubes for mixing must not, in horizontal burners, be less than five times the bore, and in vertical burners eight times the bore. The total area of outlets, either of holes or area between the meshes of gauze, must not exceed the area of the tube itself.

BURNERS LIGHTING BACK.—If a burner which has once been satisfactory commences to light back at the jet, the cause will probably be found in an obstruction of the gas jet, which alters the proportion of gas and air, or if the burner is a gauze one, a perforation or imperfection in the gauze.

GASFITTING IN LABORATORIES.—In these the gas supply pipes should always be very much larger than is ever required. It is not a question of the possibility of obtaining sufficient gas, but that the supply shall be large enough to admit of great variations in the demand without interfering with operations in progress, and the area of pipes given for specific supplies must be at least doubled for laboratory use. In addition to this, a good governor of ample size is a prime necessity, as, without it, exact work is impossible. Few laboratories are properly arranged for precision in the gas supply, and this entails not only a very great waste of time, but prevents exact work being done. A laboratory with a deficient and ungoverned gas supply lacks the one element of precision without which experimental work is of little value.

The Dentist Himself is a new dental journal, published by Dr. J. A. Kimball, 28 West Twenty-sixth street, New York, at one dollar a year. It is intended to be original and practical in its articles, depending mainly on its subscribers for matter. We wish it success.

"Hard Soldering," by Harvey Rowell, is an excellent little work. Not a word or receipt superfluous, but everything stated concisely, and by a man who is evidently experienced in everything he says. For sale by The Wilmington Dental M'f'g Company, and certainly every dentist should invest seventy-five cents and possess it.

We have just finished the perusal of "The Transactions of the American Dental Association, of 1891." It is an interesting annual. It is no wonder one of the leading members said, as they were closing: "This is the most profitable and interesting session I have ever attended." Our appreciation will be seen in our copious extracts from its proceedings. Published by S. S. White Dental M'f'g Company.

Dental Questions and Answers, by Gustavus North, on Dental Pathology and Therapeutics, etc., is a well-prepared book. Prof. North is a teacher in the American College of Dental Surgery, Chicago, and a practitioner of long and honorable standing in the Northwest.

Notices.

The Missouri Dental College is now the Dental Department of the Washington University, St. Louis, Mo. A new building will be erected for the Medical and Dental Departments, to be ready for occupancy by the opening of the session of 1892-93, and will be one of the best equipped buildings for the purpose in the United States. Eames & Young are the architects. Mr. Will Eames, of the firm, is a son of Prof. W. H. Eames.

The next annual meeting of the Vermont Board of Dental Examiners will be held at the Van Ness House, Burlington, Vt., Wednesday, March 16th, at 2 o'clock, p. m. Applicants for examination will please report promptly at that time.

R. M. Chase, Secretary Vermont Dental Examiners.

The twenty-first annual meeting of the Kansas State Dental Association will be held at Ft. Scott, April 26th, 27th, 28th and 29th, 1892. The members of the profession are cordially invited to meet with us.

C. E. Esterly, Secretary.

The sixteenth annual meeting of the Vermont State Dental Society will be held at Burlington, Vt., March 16th, 17th and 18th. A cordial invitation is extended to all members of the profession. Reduced rates on all railroads.

Thos. Mound, Secretary, Rutland, Vt.

NEW JERSEY DENTAL COMMISSION.—The next meeting for examinations of the New Jersey State Board of Examiners will be held at the office of the Secretary, 88 Broad street, Elizabeth, N. J., on Tuesday, April 19th. Candidates will please file their applications with the Secretary before April 5th; papers and information furnished on application.

Notice is hereby given that hereafter the Board will meet for examinations on the third Tuesday of April, July and October only.

G. Carleton Brown, Secretary, Elizabeth, N. J.

At the meeting of The Central Dental Association of Northern New Jersey, held February 15th, 1892, the following officers were elected: President, Dr. Harvey Iredell, of New Brunswick; Vice-President, Dr. R. M. Sanger, of East Orange; Secretary, Dr. W. L. Fish, of Newark; Treasurer, Dr. C. A. Meeker, of Newark. Executive Committee—Dr. S. C. G. Watkins, Chairman, of Montclair; Dr. Geo. E. Adams, of South Orange; Dr. F. C. Barlow, of Jersey City; Dr. B. F. Luckey, of Paterson; Dr. Oscar Adelberg, of Elizabeth.

S. S. Hawley, Secretary.

The Post Graduate Dental Association of the United States will hold its annual meeting April 29th and 30th, next, at the Leland Hotel, Chicago.

Dr. W. C. Barrett, of Buffalo, N. Y., Drs. T. W. Brophy, Louis Ottoby and others, of Chicago, will present essays and addresses. An interesting program has been arranged, and a good attendance is expected. All members of the profession are invited.

Graduates of recognized dental colleges may become members by paying membership fee, \$1.00, and dues for one year in advance, \$1.00.

L. S. Tenney, Secretary, 96 State St., Chicago.

For Our Patients.

"What is it makes the rain come down?"

Asked little Bessie Dight.

"It used to be the Lord, my dear,
But now its dynamite."

—*Buffalo Express.*

DON'T LOOK FOR FLAWS.—

Don't look for flaws as you go through life;
And, even when you find them,
It is wise and kind to be somewhat blind,
And look for the virtue behind them.

Don't waste a curse on the universe—
Remember, it lived before you.
Don't butt at the storm with your puny form,
But bend and let it blow o'er you,

The world will never adjust itself
To suit your whim to the letter;
Some things must go wrong your whole life long,
And the sooner you know it the better.

—*Med. Age.*

DENTISTRY IN WINDY CITY.

Snow had been falling for the past forty-eight hours; it was now growing colder, the wind was making a short cut across the prairie from the north.

The new dentist of Windy City sat in his little office silently chewing the stump of an unlighted cigar, which had been purchased with his last nickel the day before.*

"Well," soliloquized he, "if this blizzard lets up and Bushy Smith's wife comes in for the impression for that set of teeth, and 'Squire Banks gets that tooth extracted, and that fellow that lives over in Alkali Flats gets the work done he was talking about, I will be in a fair way to live for another month, and maybe till spring.

"Those fellows at the depot seem to be in an awful hurry for their money; let me see," he went on, "it was only three months ago that I sent them five dollars, and now here comes another statement with, 'balance due,' and 'please remit.'

"Well,"—here his thought were suddenly interrupted by a loud stamping in the hall, and presently came a knock at the door.

* Such a dentist ought not to expect success.—ED. ITEMS.

"Come in."

The knocking still continued.

"Come in," again yelled the doctor; "blamed if I don't believe the fool is deaf. Come in, I say."

Then the door opened and a head muffled up with a little red and black plaid shawls, fur cap, and blue woolen comforter, was thrust in. "Is this the dentist shop?"

"Yes; come in."

"Be you the tooth dentist?"

"Yes, sir; I have that honor," replied the dentist, brightening up. "What can I do for you?"

The figure came in, followed by another, bundled up closely—you could see only the eyes and tip of her nose. This proved the other was a woman.

"Mighty bad storm we are havin', ain't it? Samanthy and me 'lowed as how it were stormin' so you would not have much to do, and we would jest come in and see how much you be goin' to charge her for a set of teeth and abstract her old ones in the bargain."

"If she will take a seat here I will examine her mouth."

"Say, doctor, can't you put somethin' on the gooms, kinder freeze 'em so they won't hurt?" said Samanthy.

"I don't know; perhaps I could use cocaine, or if you like, will use my vibrator."

"Vibrator; what is that?"

"Electricity."

"No you don't, Doc; Samanthy wus *struck* by lightning once, 'bout eight years ago. I want no repartition ov that fun—come nigh losing her."

"Sary Ann Spriggs," said Samanthy, "what lives over our way, said that you give people sumthin' to put 'em to sleep—some kind of gas, or spiritualized air, I believe she called it. But I told her I knew you did not, for they didn't have no gas in Windy City."

"Well, then, if you would rather, I will use a local anesthetic and—"

"Taint pison, is it, you are going to use?" broke in Samanthy.

"No; just an application to the gums."

"All right, Doc; how much are you going to charge for a bang up good set of teeth, no shoddy, all wool and a yard wide?"

"The best teeth will cost \$30.00 for a full upper and lower plate."

"And won't charge for takin' the old ones out?"

"No."

"All right, go ahead, Doc; money is no object to us, if the sorgum crop turns out all right."

"Yes, that is the last one; eighteen and a few small pieces—yes, you have lots of grit. Now, what is the name, please? Wilkins, oh yes, all right Mrs. Wilkins."

"Samanthy Wilkins, if yu please, sir."

"Yes, yes! Samantha—eighteen teeth at fifty cents each, nine dollars."

"Nine dollars! thought you said you wasn't goin' to charge anything to take my teeth out?"*

"I am not—this nine dollars will be deducted from the teeth when —"

"Look here, young man, you can't play any of your confidence games on us," interposed the man. "We 'ave lived on this 'ere prairy too long to have any yaller-headed, spindle-shanked cuss as you, try it—fust thing you know you will have your collar box packed, and be driftin' outen this 'ere town faster than a brindle steer before a blizzard; do you hear?"

"This nine dollars is to be deducted from the price of the teeth when you get them made," broke in the now thoroughly frightened dentist.

"Oh, that is what you are tryin' to get through you, is it? Well, now, see here young feller, we did not come here to be bulldozed, and seein' as you mean all right, I will do the square thing by ye. Samanthy there has half a peck of castor beans—she is goin' to plant 'em on a piece of sod I broke out, just as soon as spring opens, and if they turn out as we expect, you will shure git your nine dollars. Won't he, Samanthy?"

And before the astonished dentist could reply they were gone, leaving him to reflect on the uncertainties of life, and of the dental practice in *Windy City* in particular.

H. W. Goddell, Cherokee, Kans.

"Will you please pull a tooth for me?" said a young man, coming into my office.

"Take a chair. Which would you have me extract?"

"None, sir; I only want one pulled. I have suffered with it long enough. It is this one," pointing to a lower molar. "Please pull it as soon as you can. It is of no use trying to extract it."

I pulled it.

J. E. Ward, Bellefonte, Pa.

* We cannot be too particular when we make our terms.—ED. ITEMS.

Current Notes.

The finest language on the earth is presented to the eye in the worst spelling on the earth, and the time has come to reform it.

Dr. W. H. Eames says, if you wish to remove a deciduous tooth, and, through fear, the child will not permit it, slip a piece of rubber tubing over the crown down to the neck of the tooth, and in a few days the tooth will be so loose that it can be extracted with the fingers.

Dr. J. H. Pollock, of Los Angeles, Cal., complains that Southern California, and his city in particular, is becoming overrun with dentists coming there for their health or their fortune, and that many who are incompetent come there with the false idea they are good enough for a new country, though they have failed in an older settled section.

EXONERATED THE DENTIST.—The inquest and coroner's verdict in the case of Bernard Mehan, at Pittsburg, who died in a dentist's chair recently while under the influence of vitalized air, exonerates the dentist and discovers no cause for death, declaring Mehan died without organic trouble in any vital organ. There was some testimony that vitalized air is dangerous, producing asphyxia, and not a true anesthetic.

Dr. W. Mitchell, of London, Eng., says: American dentists in Europe are continually having the status of American dental colleges hurled at them by the so-called professional literature of this side, and the value of their degrees questioned and ridiculed. American dental colleges like almost all other earthly institutions are open to improvement, and I have no doubt but their progressive superiority will be demonstrated in the future, as it has undoubtedly been in the past, continuing to furnish the pattern that is so poorly copied on this side, and which I am sorry to say at present is more of a cheap burlesque than a worthy replica; and while ridicule and poverty-stricken wit has taken the place of argument and logic in the European press, the fact remains that more bogus diplomas are held and more questionable means resorted to, to obtain legitimate degrees by men on this side of the Atlantic than on the other, and had it not been for the European market these diploma mills would have died a natural death.

Sharpen your own files and burs. Some time ago we told how this can be done, easily and cheaply; but, from what we hear and see, we judge few have profited by our hint. I do not know it is original with us. We first published it about thirty years ago. One who has profited by this mode, and has always since thus sharpened his own files and burs, asks us to give our plan again.

It is this: Boil them first in soda water, and clean out of the grooves any debris that still remains; wash off the soda-water, and keep them in sulphuric acid, diluted with half water, for two or three hours. Some instruments will need a longer time; experience will soon show how long. When sharpened, rinse thoroughly in soda-water, wipe dry and oil them slightly.

Is your business increasing? If not, the probability is, you are not increasing in your ability to do better work. Just look your situation over; for, if there is no increase, there is some cause. What is it? Generally, it is within your reach; and nine times in ten it is within yourself. Take a whole day for a thorough self-examination. It will do you good, it will do your business good, it will do your wife and children good. Ah, there is nothing like probing oneself. We are sure to find something that needs curing. Better run away to the woods, or to the very caves, and live on bread and water, till you can find and conquer your impediment. My word for it, you will come out a better and a wiser man. Don't give up to stagnation, and be a fossil; neither would I allow any evil habit to bind or hinder me. Shake yourself from every weight and fetter, and bound ahead.

From accounts recently printed in certain popular journals, it would appear that the cigaret habit is taking a strong hold of New York society women. It is to be sincerely hoped that it will remain with the "society women" exclusively, if it is to remain at all. Some women have a hard time to invent some new recreation. They have devoted their lives to pleasure, and have tried every thing. Nothing pleases long. Every pleasure palls on their hands. They rack their brains to find an untried scheme for passing time away. Smoking cigarets is about up to the grade of this class of women. If the fashion should prove contagious and prevail among women generally, what a spectacle we should have! To women smoking we could only add women drinking and loafing about saloons, and the picture of depravity would be complete.

Editorial.

BE *THE* DENTIST.

There is quite a difference between being *the* dentist of a place and being *the* dentist's satellite. The one is sought; the other is obliged to seek. The one is waited on; the other waits. The one commands his time, prices and patients; the other takes what he can get. The one takes the cream; the other is glad of the skimmed milk.

This difference is not a circumstance of mere chance, of fortuitous happening, or of blandent assumption. It is generally determined by skill and sterling professional qualities. The better class of a community are generally pretty good judges of a dentist's work, and patronize him accordingly.

There may be in a community two or three who are specially skilful; but one gains distinction by superior address, agreeable manners, and sympathetic nature. These go a great way in making a dentist popular and successful. How quickly men, women, and children find out such a dentist, and give him preference. Try it; that is, if after you get your patients, you can keep them by doing good work.

Sometimes, one becomes *the* dentist of a place by doing a line of valuable work the others cannot—or, at least, do not—do. There is nothing like standing out distinctively for something definite that is appreciated. People naturally argue: "Well, if he can do that, he must be master of his business."

Perhaps one has simply a better way of getting and keeping before the well-to-do class of the people. Of course, he does not advertise. He leaves all that vulgar trash to his neighbors, who are sure to have in the newspapers, and otherwise, flaming descriptions of what they can do. He does not even have his card in a single paper. He has too much dignity, and too much regard for the dignity of the profession, to advertise in any way, or to do anything common or unclean, though it might bring him unlimited practice. His must have an esthetic and a professional practice or nothing. And yet, allow me to whisper, he does advertise. We all advertise, and none more profusely than *the* dentist.

"I wish I knew how it is done," said a dentist, speaking of his successful competitor. "There is some mystery about it. He advertises, and yet he does not advertise; he is reserved and quiet, and yet he is known everywhere. He would resent the idea that he did anything for display, or from a mercenary motive, or to call attention to his business, and yet, somehow, everything he does, public or private, brings patients and cash. He certainly has a popular way with him."

"Ah, has he?"

"Yes; and his very appearance is rather taking. You would know he was a professional man by his very dress and manners in society."

"Are there not here two secrets of his success?"

"I must give him credit, too," he continued, "for being liberal and public-spirited, and always ready to advance public improvements."

"I thought you did not know how it was done?"

"Well, but this is not advertising."

"Of course not; not a bit of it. He does it all because he thinks it is right and proper; but every right and proper thing has its reward."

"That is so. I can't blame him for being benevolent and public-spirited, and for making himself generally agreeable and useful. I wish I was more so myself. Why, he actually works for the ministers and physicians and their families for half price! And when I was in his office, the other day, I heard him tell Mr. Brown, for whom he had done considerable work, 'Oh, never mind that; that is all right.' I should soon get poor if I did such things as these."

"No; you would get rich, if you did their work well. The fact is, he works for no one for less than full pay, and these you mention pay him good fees; even that man for whom he worked gratis paid him a good fee. I noticed in this city *Times* a notice that will be a rich reward, and yet I judge it is no flattery. If I were a dentist, I would like lots of such patients."

"Deliver me from being *the* dentist of a place, if it is at such a cost. You say, Editor Brown paid him in that notice; it was hardly a dozen lines long, and I saw no special point in it. It certainly was nothing like an advertisement of Dr. Child's skill."

"No; if it had been its worth would have been nothing. It was a plain truth told by a man of influence."

"Why, I have known that editor to charge this dentist ten cents a line for a whole column of an essay on "Children's Teeth" and other dental subjects. I tell you that is too steep for common dentists; and I was actually told that Child paid \$150 for the little pamphlet he put out last spring."

Reader, now do not go away and say we advised you to become an advertising dentist.

OUR POSITION AT THE CHAIR.

Too many abuse themselves by evil habits, and blame the results to their business. For instance, many dentists stand in a strained, cramped, injurious position at the chair, and when the body suffers, they are sure to lay the blame on dentistry. But to see their position while at work should convince any one that it ought to injure them. The fact is, we are too thoughtless about our health in many ways, whether we are dentists or physicians, mechanics or even farmers.

If one of these dentists who complain he cannot endure his position at the chair while filling teeth, should see another make a corkscrew of himself as he does, he would condemn him utterly.

Sometime since we were visiting a dental office, when a physician entered, saying:

"Well, doctor, what can I do for you? For what did you send for me?"

"I just thought I'd ask you a question, doctor, if you could step in as you were passing. I'll be at liberty in a moment. My side is hurting me quite considerably, and I can hardly devine the cause."

"I am glad it is nothing more serious," said the physician; "I was afraid you were sick. I see now, you ought to be if you are not. Do you generally work in that stooped, cramped, corkscrew position, throwing your whole weight on your right side against the arm of the chair, as you are doing now?"

"Really, doctor," replied the dentist, "I was not aware I was in the awkward position you describe. I sometimes find myself hurting myself and cramping my back; then I change my position; I'll do it now."

"It is no use trying to excuse yourself, doctor. That position has grown to be a habit; and the only way to rid yourself of it, if you ever do, which I doubt, is to hire a big boy to stand by you and give you a sharp punch every time you shall lean against that arm and do not stand up to your work as you ought. There; you have unconsciously gone back to it, even while I am talking to you."

In the course of fifteen minutes the dentist's work was done sufficiently to turn the patient over to his assistant; and Dr. F. invited the physician and myself into another room.

"Now to be serious, doctor," the dentist continued, "I have been troubled for some time with an internal swelling in my right side, which at times gives me much alarm."

"I should think it would," replied the physician.

"Lately I have thought pus was forming there."

"I should think it would."

"I am sometimes afraid it will necessitate my abandoning dentistry altogether."

"I should think it would."

"But, doctor, you smile. It gives me too much anxiety to be trifled with."

"Seriously, I should think it would."

"But, doctor, what can be done for it?"

"Behave yourself."

"Oh, but now, you can't turn it off in that way. Something must be done, or it will kill me."

"I should think it would, doctor. You are a murderer, you are killing yourself, and is not this as bad as killing some one else? Either quit you position at the chair that causes this really serious trouble, or quit your work altogether. You must avoid this evil or die."

Many dentists could take a lesson from this conversation. If you cannot stand up properly at the chair, sit on a stool; but whether sitting or standing avoid every unhealthful position.

TREATING AN EXPOSED, OR PARTLY EXPOSED, PULP.

First saturate the cavity with "heaven's cordial, and a little of the following mixed with it; one part oil cloves, three parts carbolic acid made into a soft paste with tannin. If you have not heaven's cordial, use in its place chloroform. Then clean away all debris from the cavity, as well as you can, without disturbing the pulp. Be careful not even to lift the thin, leathery layers of softened dentine from over or near it; for the less the pulp is disturbed the surer the treatment. Now, cut down weak walls, and be as thorough in preparing the cavity for filling as possible, without impinging on the pulp. Rub a little of the obtundent in the cavity (but not enough to saturate), and over this flow a coating of chloro-percha. Blow on warm air to evaporate the chloroform, and then fill the cavity with oxyphosphate, put in rather thin, so as to avoid all pressure, and also so that it will stick to the walls of the cavity.

In from four to six weeks the pulp will be incased in a beautiful tanned covering. This should not be disturbed. The best way is to have everything intact, except to remove a little of the oxyphosphate, so as to give room and undercut for a permanent covering of alloy or gold.

Before this, however, and during the healing of the pulp, there may be an accumulation of pus. If so, remove the temporary filling, thoroughly syringe with hot water, and after flowing over a little peroxide of hydrogen, then repeat the first dressing, though of course a favorable result is not so sure.

Don't shrink from trouble, annoyance and difficult work. These perplexing experiences are worth more than pleasant and ordinary occurrences. They are disciplinary, and ensure growth and endurance and strength of character. Meet trouble bravely; give it no chance to escape you till it is conquered. Face annoyances with a brave heart, and probe them till you can smile at their insignificance. Be thankful for difficult work and do it so thoroughly that its difficulty vanishes under new experiences. These adverse circumstances come to all of us. They discourage, dishearten and conquer the weak, the timid and the lazy. The courageous push on and win.

How many would succeed if they could jump into success at a bound! But Providence has not so ordered it. We must fight if we would reign, and fight manfully, intelligently and persistently. By this means every mile of the way is made surer ground, for the unfit are continually falling out, so that the survival of the fittest are more sure to win.

It is not the hardest worked gold filling that is always the best, but the one most closely fitting the walls of the cavity and which is the most uniformly packed, though no sledge hammer has been used. We often see gold fillings that have been in many years which never felt the blow of a hammer.

In packing gold, comparatively fine-pointed instruments are better than those of a broad surface, and small pieces of gold are better than large pieces.

Entering an office when a dentist was having difficulty in filing a proximal surface of a lateral incisor, he said to me:

"There, Doc, you have come just in time. I have filled this small cavity three times, and it will not stay. Do let me see you fill it."

Looking over his instruments, I could not find one fine and delicate enough for such a cavity; and then each piece of gold on his tray was almost enough to fill the cavity. Taking up two of his finest excavators, I broke off their extreme point, and taking a small piece of gold, I passed it to the under cut in the farther wall and packed it moderately, holding it in position with the fine instrument in my left hand. Still holding it there, I placed another small piece by its side, and another and another, moderately compressing each till I had filled the cavity. Then wedging in a piece or two, I compressed the whole. In ten or fifteen minutes I had a solid, substantial filling. This was not because I was a superior filler, but because I did what every dentist can do, adapt the means to the end. By the by, these small, broken instruments of various shapes, are admirable for packers. The shank of some should be rather stiff, but the surface of the point rough; though when they have worn smooth they are quite as good for most purposes.